TWENTY THOUSAND LEAGUES UNDER THE SEA

Jules Verne

Translated by Lewis Mercier

With an Introduction and Notes by Victoria Blake

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Consulting Editorial Director

BARNES & NOBLE CLASSICS
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From the Pages of
Twenty Thousand Leagues Under the Sea

The year 1866 was signalized by a remarkable incident, a mysterious and inexplicable phenomenon, which doubtless no one has yet forgotten. (page 5)

The monster emerged some fathoms from the water, and then threw out that very intense but mysterious light mentioned in the report of several captains. This magnificent irradiation must have been produced by an agent of great *shining* power. The luminous part traced on the sea an immense oval, much elongated, the center of which condensed a burning heat, whose overpowering brilliancy died out by successive gradations. (page 30)

"The sea is everything. It covers seven-tenths of the terrestrial globe. Its breath is pure and healthy. It is an immense desert, where man is never lonely, for he feels life stirring on all sides. The sea is only the embodiment of a supernatural and wonderful existence." (page 57)

"I owe all to the ocean; it produces electricity, and electricity gives heat, light, motion, and, in a word, life to the *Nautilus."* (page 64)

Captain Nemo, by the help of his sextant, took the altitude of the sun, which ought also to give the latitude. He waited for some moments till its disk touched the horizon. While taking observations not a muscle moved; the instrument could not have been more motionless in a hand of marble. (page 74)

Evidently from some part of the vessel they had by means of a tap given entrance to the water, which was invading us, and with which the room was soon filled. A second door cut in the side of the *Nautilus* then opened. We saw a faint light. In another instant our feet trod the bottom of the sea. (page 86)

At this moment, the *Nautilus,* raised by the last waves of tide, quitted her coral

bed exactly at the fortieth minute fixed by the captain. Her screw swept the waters slowly and majestically. Her speed increased gradually, and sailing on the surface of the ocean, she quitted safe and sound the dangerous passes of the Straits of Torres. (page 128)

“Steam seems to have killed all gratitude in the hearts of sailors.” (page 167)

I returned to the glass. The *Nautilus* was no longer moving, the heat was becoming unbearable. The sea, which till now had been white, was red, owing to the presence of salts of iron. In spite of the ship’s being hermetically sealed, an insupportable smell of sulphur filled the saloon, and the brilliancy of the electricity was entirely extinguished by bright scarlet flames. I was in a bath, I was choking, I was broiled. (page 186)

At a signal from the captain, its screw was shipped, and its blades raised vertically; the *Nautilus* shot into the air like a balloon, rising with stunning rapidity, and cutting the mass of waters with a sonorous agitation. Nothing was visible; and in four minutes it had shot through the four leagues which separated it from the ocean, and, after emerging like a flying-fish, fell, making the waves rebound to an enormous height. (pages 218-219)

“Adieu, sun! Disappear, thou radiant orb! Rest beneath this open sea, and let a night of six months spread its shadows over my new domains!” (page 243)

Captain Nemo, covered with blood, nearly exhausted, gazed upon the sea that had swallowed up one of his companions, and great tears gathered in his eyes. (page 270)

If Captain Nemo still inhabits the ocean, his adopted country, may hatred be appeased in that savage heart! (page 296)

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Vingt Mille Lieues sous les mers was originally serialized in France between 1869 and 1870. Lewis Mercier's translation and slight abridgement of *Twenty Thousand Leagues Under the Sea* introduced English readers to Verne's work.

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Jules Verne

The creator of the *roman scientifique,* the popular literary genre known today as science fiction, Jules Gabriel Verne was born in the port town of Nantes, France, in 1828. His father, Pierre, was a prominent lawyer, and his mother, Sophie, was from a successful ship-building family. Despite his father's wish that he pursue law, young Jules was fascinated by the sea and all things foreign and adventurous. Legend holds that at age eleven he ran away from school to work aboard a ship bound for the West Indies but was caught by his father shortly after leaving port.

Jules developed an abiding love of science and language from a young age. He studied geology, Latin, and Greek in secondary school, and frequently visited factories, where he observed the workings of industrial machines. These visits likely inspired his desire for scientific plausibility in his writing and perhaps informed his depictions of the submarine *Nautilus* and the other seemingly fantastical inventions he described.

After completing secondary school, Jules studied law in Paris, as his father had before him. However, during the two years he spent earning his degree, he developed more consuming interests. Through family connections, he entered Parisian literary circles and met many of the distinguished writers of the day. Inspired in particular by novelists Victor Hugo and Alexandre Dumas (father and son), Verne began writing his own works. His poetry, plays, and short fiction achieved moderate success, and in 1852 he became secretary of the Theatre lyrique.

In 1857 he married Honorine Morel, a young widow with two children. Seeking greater financial security, he took a position as a stockbroker with the Paris firm Eggly and Company. However, he reserved his mornings for writing. Baudelaire's recently published French translation of the works of Edgar Allan Poe, as well as the days Verne spent researching points of science in the library, inspired him to write a new sort of novel: the *roman scientifique.* His first such novel, *Five Weeks in a Balloon,* was an immediate success and earned him a publishing contract with the important editor Pierre-Jules Hetzel.

For the rest of his life, Verne published an average of two novels a year; the fifty-four volumes published during his lifetime, collectively known as *Voyages Extraordinaires,* include his best-known works, *Around the World in Eighty Days* and *Twenty Thousand Leagues Under the Sea.* Begun in 1865 and published to huge success in 1869, *Twenty Thousand Leagues* has been translated into 147 languages and adapted into dozens of films. The novel also holds the distinction of describing a submarine twenty-five years before one

was actually constructed. As a tribute to Verne, the first electric and nuclear submarines were named *Nautilus*.

In 1872 Verne settled in Amiens with his family. During the next several years he traveled extensively on his yachts, visiting such locales as North Africa, Gibraltar, Scotland, and Ireland. In 1886 Verne's mentally ill nephew shot him in the leg, and the author was lame thereafter. This incident, as well as the tumultuous political climate in Europe, marked a change in Verne's perspective on science, exploration, and industry. Although not as popular as his early novels, Verne's later works are in many ways as prescient. Touching on such subjects as the ill effects of the oil industry, the negative influence of missionaries in the South Seas, and the extinction of animal species, they speak to concerns that remain urgent in our own time.

Verne continued writing actively throughout his life, despite failing health, the loss of family members, and financial troubles. At his death in 1905 his desk drawers contained the manuscripts of several new novels. Jules Verne is buried in the Madeleine Cemetery in Amiens.

The World of Jules Verne and Twenty Thousand Leagues Under the Sea

1828	Jules Gabriel Verne is born in the port city of Nantes, France, the first of the five children who will be born to Pierre and Sophie Allotte Verne. His father, an attorney, will encourage young Jules to pursue a career in law. His mother, from a ship-building family, instills in him a love of the sea.
1831	Victor Hugo's *Notre-Dame de Paris (The Hunchback of Notre Dame)* is published.
1833	George Sand's novel *Lélia* is published by the well-known publisher Pierre-Jules Hetzel, who later will publish Verne's novels.
1834	Jules begins attending secondary school. During his years at school, he excels in geology, Latin, and Greek. Also greatly interested in machinery, he makes frequent visits to nearby factories.
1839	It is said that the adventurous boy tries to run away to sea aboard a ship bound for the West Indies but is apprehended by his father before reaching open waters.
1843	Tahiti becomes a French protectorate.
1844	Alexandre Dumas's *Le Comte de Monte Cristo (The Count of Monte Cristo)* is published.
1847	Jules begins studying law in Paris; he will receive his degree in two years. In Paris, family friends introduce him to some of France's most distinguished writers, including Victor Hugo. Jules begins writing to supplement his meager allowance. Several of his plays are well received in theaters; his

	fiction appears in the Parisian magazine *Musée des familles.*
1852	Louis- Napoléon becomes emperor of France as Napoleon III. Novelists Alexandre Dumas (pére and fils) secure Verne a position as secretary of the Theatre lyrique.
1853	French administrator Georges-Eugène Haussmann begins alterations and municipal improvements in Paris, including the construction of the wide boulevards that distinguish the city to this day. The Crimean War begins, pitting Russia against France, England, and the Ottoman Turks.
1854	French poet Charles Baudelaire's translation of the works of Edgar Allan Poe captivates Verne and initiates his lifelong admiration of the American author.
1857	Verne marries the widow Honorine de Viane Morel, whom he had met the previous year. Quitting his position at the Theatre lyrique, he embarks on a career as a stockbroker at Eggly and Company, although he continues to devote his mornings to writing. Charles Baudelaire's volume of poems *Les fleurs du mal (The Flowers of Evil)* and Gustave Flaubert's novel *Madame Bovary* are published.
1859	Verne spends hours in the library gaining the scientific knowledge that will inform his fiction. He travels to England and Scotland. English naturalist Charles Darwin's *On the Origin of Species by Means of Natural Selection* is published. Work begins on the Suez Canal.
1861	Verne travels to Norway and Denmark. His son and only child, Michel, is born. He meets the legendary photographer Nadar.
1862	Verne's manuscript *Cinq semaines en ballon (Five Weeks in a Balloon)* is accepted by Hetzel for publication. Until his death, Verne will publish an average of two books a year with

	Hetzel, forming the cumulative series known as *Voyages ex- traordinaires (Extraordinary Voyages).* Hugo's *Les Misérables* appears.
1863	*Five Weeks in a Balloon* is published to great success.
1864	*Voyage au centre de la Terre (Voyage to the Center of the Earth)* is published. Verne writes an article on Poe for *Musée des familles.*
1865	*De la Terre à la Lune (From the Earth to the Moon)* appears. English writer Lewis Carroll's *Alice's Adventures in Wonderland* is published.
1866	*Voyages et aventures du capitaine Hatteras (The Adventures of Captain Hatteras)* is published.
1867	Verne travels with his brother Paul to New York aboard the *Great Eastern. Les enfants du capitaine Grant (The Children of captain Grant)* is published.
1868	*Captain* published. He purchases his first yacht, the *Saint-Michel,* named for his only son
1869	*Vingt mille lieues sous les mers (Twenty Thousand Leagues Under the Sea)* is published in two volumes (1869-1870). Its depiction of the submarine *Nautilus* (named after the first submarine, invented around 1800 by American engineer Robert Fulton) predates the construction of the first submarine by twenty-five years.
1870	The Franco-Prussian War breaks out; Verne serves in the Coast Guard.
1871	*Une ville flottante (A Floating City),* partly inspired by a trip to Niagara Falls, New York, is published. Verne's father dies. The Franco-Prussian War ends.
1872	The Verne family moves to Amiens, where Verne will reside the rest of his life.
1873	Another Verne masterpiece, *Le tour du monde en quatre vingts jours (Around the World in Eighty Days),* is published. French poet Arthur Rimbaud's confessional autobiography *Une Saison*

	en Enfer (A Season in Hell) is published.
1874	*Le Docteur Ox (Dr. Ox's Experiment and Other Stories)* appears, along with *L'Île mystérieuse (The Mysterious Island).* *Around the World in Eighty Days* is adapted for the stage. Verne purchases a new yacht, the *Saint-Michel II.*
1875	*Le Chancellor (The Chancellor)* is published.
1876	*Michel Strogoff* is published.
1877	*Les Indes noires (The Child of the Cavern) and Hector Servadac* are published. Verne buys his last yacht, the *Saint-Michel III.*
1878	A leisurely cruise aboard the *Saint-Michel III* takes Verne and his brother to North Africa, Portugal, and Gibraltar.
1879	*Les Cinq cents millions de la Bégum (The Begum's Fortune)* and *Les tribulations d'un Chinois en Chine (The Tribulations of a Chinaman in China)* are published.
1880	Verne cruises to Scotland and Ireland. *La Maison a vapeur (The Steam House)* is published.
1881	Verne cruises to Holland, Denmark, and Germany. *La Jan-gada (The Giant Raft)* is published.
1882	Verne moves his family to a larger house in Amiens with a circular tower; today it is a well-known Verne landmark and the headquarters of the Jules Verne Society in Amiens.
1883	Scottish writer Robert Louis Stevenson's novel *Treasure Island* is published. War in Indochina breaks out.
1884	Verne voyages to Italy, where Pope Leo XIII personally blesses his work.
1885	Victor Hugo dies. English novelist Henry Rider Haggard publishes *King Solomon's Mines.*
1886	Verne's deranged nephew, Gaston, shoots him in the leg, laming him for life. This personal disaster, and his growing cynicism about industrialization, marks a turn toward pessimism in Verne's outlook and

	writing. His longtime publisher, Hetzel, dies. Verne sells the *Saint-Michel III* because of financial concerns. Robert Louis Stevenson publishes *Dr. jekyll and Mr. Hyde.*
1887	Verne's mother dies.
1888	Verne is elected to the municipal council of Amiens, where he will serve for fifteen years.
1889	*Sans dessus dessous (Topsy-Turvy)* appears, which contains notably negative views on the potential of technology. His later novels will take on various forms of social injustice, from the plight of orphans to the corrupting power of missionaries in foreign lands.
1895	English novelist H. G. Wells's *The Time Machine* is published.
1897	*Le Sphinx des glaces (The Ice Sphinx),* written as a sequel to Poe's 1838 novel *The Narrative of Arthur Gordon Pym,* is published. Flagging health plagues Verne. His brother Paul dies. English writer Rudyard Kipling's *Captains Courageous* and Edmond Rostand's play *Cyrano de Bergerac* are published.
1899	Verne's *Le testament d'un excentrique (The Will of an Eccentric)* deals with the oil industry's ravages of the environment.
1905	Leaving a drawer filled with manuscripts, and with his fam- ily gathered at his bedside, Jules Verne dies of complications from diabetes. He is buried in Madeleine Cemetery in Amiens. His posthumously published novels, altered considerably by his son, Michel, remain a source of scholarly debate and interest.

Introduction

The book you hold in your hands is considered by many Jules Verne readers to be his masterpiece. Serialized in a widely read French family magazine in 1869 and 1870 and published in two volumes in those same years, it was Verne's seventh successful novel. As is true of much of his fiction, in *Twenty Thousand Leagues Under the Sea* Verne capitalized on the spirit of the time, incorporating up-to-the-minute scientific data in a pulse-quickening adventure plot. Verne's mission as a novelist, he wrote, was to "depict in novel format the entire Earth, the whole world, by imagining adventures unique to each country and by inventing characters indigenous to the habitats in which they live" (quoted in Evans, *Jules Verne Rediscovered: Didacticism and the Scientific Novel,* p. 30; see "For Further Reading"). By all accounts, he succeeded, originating a fictional genre, writing in a voice at once unique and universal, and for forty years feeding his devoted readers a steady diet of extraordinary fiction based on scientific fact.

France had never seen anything like Verne. His readers touted him as a genius, a soothsayer, a visionary. His fourth book, *From the Earth to the Moon,* was so popular it elicited requests from single French women wishing to accompany Verne to the lunar landscape in his new space-going vessel. "Parisians are certainly brave," Verne wrote in a letter after publication of that book. "Some of them are determined by hook or crook to embark on my projectile" (quoted in Teeters, *Jules Verne: The Man Who Invented Tomorrow,* p. 62). His reputation grew, and his works were reportedly translated into more languages than Shakespeare's plays. "Take a young English boy and put half of *Twenty Thousand Leagues Under the Sea* in his hand, in translation; then give him the other half in French; and that boy will figure out a way to try to understand," said British author and Verne enthusiast Rudyard Kipling (quoted in Lynch, *Jules Verne,* p. 112). Verne never let his readers down, publishing more than sixty novels and some twenty short stories, as well as a few dozen plays. Even one hundred years after his death, a new generation of Verne fans can see his plots through Disney's lens. His enduring popularity is a testament to the human appetite for fantasies brought to life.

Among Verne's mountain of novels collectively known as *Extraordinary Voyages, Twenty Thousand Leagues Under the Sea* stands out. In it, Verne used techniques he perfected in his previous books. Near-death beneath the ice caps and strangulation in the tentacles of giant squids made his readers squirm in their armchairs, while observation windows and an encyclopedia-toting sidekick educated as they entertained. At times remarkably lyrical, at other times strictly scientific, Verne's writing took readers places they had never gone before—indeed, to places few of them had even imagined. But unlike in

his other novels, in *Twenty Thousand Leagues Under the Sea* he did more than paint a realistic picture of an unreal voyage. The book is Verne's masterpiece not for the wonders of the sea he describes, but for the realistic creation of a singular man. It's Captain Nemo, to the maelstrom and to the end.

In his other books, Verne's heroes are acted upon. The outside world intrudes on the voyage of discovery; it supplies the adventure and propels the books, and their narrators, onward. In *Twenty Thousand Leagues Under the Sea,* Verne turns the drama inward by making Nemo the central figure and the propelling force. The book follows the adventures of Verne's scientist-hero, Aronnax, and his two friends Ned Land, the harpooner, and Conseil, Aronnax's manservant, during a period of captivity and scientific discovery in Captain Nemo's submarine. It is through Nemo's genius and his secret (and possibly malevolent) motives that the three captives find themselves on their voyage. Verne knew that, for the book to work, Nemo had to be almost larger than life. "It is important that this unknown character refrain from contact with other human beings, from whom he lives apart," wrote Verne in a letter to his publisher. "He is no longer on *earth,* he manages without the earth" (quoted in Lottman, *Jules Verne: An Exploratory Biography,* p. 130). A natural leader living on a ship inhabited by a crew of ghostlike men, a noble scientist in search of the unknown, a child marveling at the bounty of the seas, a genius and a lunatic, Nemo is the most complex character Verne ever created. He destroys ships without conscience and yet cries over lost companions. He is genial, affable, and terrible all at once. Nemo is Verne's work of genius, ranking alongside Melville's Captain Ahab and London's Sea Wolf as the most fearsome and complex man sailing the fictional seven seas.

But what combination of luck and craft brought Verne to Nemo, or Nemo to Verne? For a writer whose pen traveled more than sixty times over continents and through atmospheres, how did *Twenty Thousand Leagues Under the Sea* come to be Verne's masterpiece? And how did Verne—part bourgeois, part bohemian—become the grandfather of scientific fiction, the creator of a new genre in the world of letters, and the master of extraordinary voyages?

Jules Verne was born on February 8, 1828, in Nantes, France, a prosperous commercial port still thriving at the tail end of the French maritime boom and the African slave trade. He grew up watching three-masted schooners glide into the harbor and studying the workings of steel-making machines that fed the maritime industry. His father was a successful provincial lawyer and a devout Catholic, his mother a gifted lyricist with the temperament of a poet. As a child, he read James Fenimore Cooper, Sir Walter Scott, Charles Dickens, and Victor Hugo. He also read Daniel Defoe's *Robinson Crusoe* and Johann Wyss's *The Swiss Family Robinson,* survival tales that captured his imagination. "It is man set out on his own, solitary man, the one who one day finds the imprint of a bare foot on the soil," Verne wrote in his incomplete memoir. "It is a family: father, mother, and children, with their diverse talents. How many years did I spend on their island! How eagerly I became wrapped up in their

discoveries! How much I envied their fate" (quoted in Lynch, p. 20).

Verne was the first of five children. His closest brother, Paul, would go on to become a naval officer. But in an age when fathers more or less controlled the fate of their first-born sons, Verne would not be allowed to indulge his fantasies of traveling on the open seas. After a spotty academic history in primary and secondary school—"studious children invariably turn into half-witting grownups," he wrote (quoted in Schoell, *Remarkable Journeys: The Story of Jules Verne,* p. 13)—Verne followed his father's plan and enrolled at law school in Paris. He studied the first year in Nantes, then moved to the capital in the winter of 1848 to be closer to his classes.

"I came to Paris as a student just about the time when the grisett [prostitute] and all that she meant was disappearing from the French Quarter," Verne wrote in his memoir (quoted in Lottman, p. 20). He also arrived on a tight budget, prescribed by a father wary of the distractions available to a young man alone for the first time in the capital.

Verne's early life in Paris was far from easy. His father wasn't sending him enough money to live even meagerly, and his health suffered as a result. He detailed his hardships in his letters home. The majority of the letters were spent accounting for daily expenses, detailing how much he spent on food and how much on clothes: "My accursed watch is costing me six francs in repairs, my umbrella fifteen francs, and I had to buy a pair of boots and a pair of shoes" (Lottman, p. 26). He bragged about finding a complete edition of Shakespeare for a bargain, but he complained at not having anything good to eat. "Ever since my arrival in Paris there hasn't been a moment without a stomach ache," he wrote to his parents (Lottman, p. 25). Occasionally, half of his face would fall into paralysis. He was tired. He was studying all the time, and, he complained to his parents, his law examinations would be "frightful."

These letters served two purposes. First, they convinced his father that he was living frugally and concentrating on his schoolwork. Second, they hid from his father his developing passion: Verne wanted to write for the stage.

It was a golden age for French theater, very similar in some ways to Hollywood in the 1940s. A modestly successful playwright could expect to make enough money staging a mediocre play to support himself in style. A popular playwright would be celebrated and revered. Through a series of connections, Verne met and befriended Alexandre Dumas, author of the celebrated historical novel *The Three Musketeers* and one of the most successful playwrights of his time. Dumas and his son in turn introduced the young and ambitious Verne to others in their theatrical circles. They even collaborated with Verne on some of his works.

At the same time, Verne became a periodic contributor to *Musée des familles (The Family Museum),* an educational magazine run by a friend from school. Verne's work for the magazine took him to the Paris library, where he spent long hours gathering facts and culling through recent documentation on notable scientific events. He read about a hot-air balloon, *Le Giant,* that was

three times larger than any balloon previously launched. He discovered articles on the famed 140-foot submarine *Le Plongeur,* the first to be powered by compressed air. He discovered Robert Fulton, who around 1800 had built a prototypical submarine, the *Nautilus,* which stored enough air to sustain its two-man crew for a five-hour dive.

Through his reading, he became familiar with the major scientific and mechanical inventions of his time and developed an active interest in the quickening progress of technical discoveries. Once his research was complete, he put together fictional stories that highlighted the facts he had discovered. (He inserted bits of naval history into his story "The First Ships of the Mexican Navy" and recounted the push to discover the North Pole and the hardships of an Arctic winter in "A Winter in the Ice.") Despite the hard work and long hours, his stories failed to bring him success; his name was even misspelled in at least two magazines. But his effort was far from wasted: Although he could not know it at the time, *Musée des familles* introduced him to a form of writing that would become his mainstay.

His fiction was at best an extra paycheck once in a while, but it was also a distraction from the art of the stage. During Verne's early years in Paris, he wrote about twenty-five plays, including comedy, farce, plays in verse, high tragedy, and musicals; while some were well received, most never made it to the stage. Still, the experience taught Verne valuable lessons. At the end of this period—what some have called his apprenticeship—he could write dialogue and invent plots, and he knew what it was to try and fail. Most importantly, his experience showed him that despite his father's wishes, he felt a true passion for writing. "There are serious studies to be done on the present genre of literature," Verne wrote in a letter, "and especially on that of the future" (quoted in Evans, p. 17).

When he graduated from law school, he had to make a choice: either return to Nantes to take over his father's law practice and lead what he saw as a comfortable but bloodless life, or remain in Paris to write. After years spent trying to convince his father of his commitment to the law, Verne took a new direction. Even while asking for his father's continued economic support, Verne admitted he had no passion for law. "My dear father," Verne wrote, "whether I do law for a couple of years or not, if both careers are pursued simultaneously, sooner or later one of them will destroy the other.... And in my opinion, the bar would not survive" (Evans, p. 17). He went so far as to warn his father that if forced to return to Nantes, he would ruin his father's practice. Eventually his father agreed to let him stay in Paris to write.

By 1856, after five years spent trying unsuccessfully to make a living from writing—and five years' begrudging economic support from his judgmental father—Verne started to doubt his prospects. "It is as if the moment I get an idea or launch any literary project, the idea or project at once goes wrong," Verne wrote to his father. "If I write a play for a particular theater director, he moves elsewhere; if I think of a good title, three days later I see it on the billboards announcing someone else's play; if I write an article, another appears on the same subject. Even if I discovered a new planet, I believe it

would at once explode, just to prove me wrong" (quoted in Teeters, p. 45). Faced with failure, Verne indicated he might be ready to return to a professional life. "While I tend to my art, I am quite capable of devoting time and energy to another job," he wrote in a letter home (quoted in Lottman, p. 69).

To complicate matters, Verne wanted to find a wife. "I want to marry, I must marry, I should marry," he wrote in a letter home (Lottman, p. 67). "It's the perfect time to get married, my dear mother, so I ask you to get to work. Find the way to present me as a good husband" (Lottman, p. 55). In order to attract a wife, Verne knew he needed to find steady employment and so, in 1856 when he met a wealthy, twenty-six-year-old widow named Honorine Morel, he chose a new career. Asking his father for seed money to invest in a stock brokerage firm, he proposed to Honorine, secured a job, and was soon married. The wedding ushered in another five years of hard work for Verne. In addition to supporting a family by buying low and selling high on the Paris stock market, he rose every morning at dawn to write for five hours before going to work. This period lasted until 1862, when Verne's manuscript *Five Weeks in a Balloon* found its way into the hands of publisher Pierre-Jules Hetzel and his successful career as a writer of scientific fiction began. "My friends, I bid you adieu," Verne is reported to have said to his stock exchange friends. "I've had an idea ... an idea which should make me rich. I've just written a novel in a new style, truly my own. If it succeeds, it will be a gold mine. So, I'll continue to write and write ..." (quoted in Evans, p. 21)

That, of course, is exactly what he did.

Major cultural forces contributed to Verne's success. In 1850 a French law (Le Loi Farroux) declared that all scientific education in the nation's secondary schools was to be controlled by the Catholic Church. The law had a devastating effect on two generations of French students. At a time when European and American scientists were discovering steam and electricity, as the phonograph and the telephone were created, while tram and railroad tracks were laid down the world over, the French government closed its eyes and stuffed its ears. "Any retreat from classical studies has the effect of shaking the very foundations of Christianity," wrote Archbishop Kopp (Evans, p. 13), summarizing the reactionary sentiments of the time. In France science became an instrument of politics, and education vacillated between the Romantic ideal of classics-based studies and the religious ideal of the Bible. The backlash against science was profound and harsh. Romantic poets, watching the plundering of nature to feed the industrial revolution, wrote love songs to nature and recommended a return to a "natural" way of life.

In the gap created on the one side by scientific discoveries and the march of industrial progress, and on the other side by reactionary educational practices, Verne found his home. With the help of his shrewd publisher, Pierre-Jules Hetzel, and Hetzel's showpiece publication, *Magasin d'education et de recreation (Magazine of Education and Recreation),* within a year of the

publication of the novel *Five Weeks in a Balloon* Verne's name was known throughout France.

Hetzel had been a successful and influential publisher in Paris until, in 1851, French Emperor Napoleon III banished him from the country. Even while living in exile, Hetzel had managed to bring to print some of the most important French writers of his time, including Balzac, Hugo, Lamartine, de Vigny, and Sand. During the amnesty of 1859, Hetzel returned to Paris with a new mission. Instead of "art for art's sake," or high literature, Hetzel targeted an emerging market created by France's changing education system. Founding the handsome bimonthly *Magazine of Education and Recreation,* Hetzel sought fiction and articles that educated as they entertained. Verne, with his experience writing stories for *Musée des familles* and his self-education through years of scientific research, turned out to be the very man Hetzel was looking for. When Verne approached Hetzel with his manuscript, Hetzel snapped it up. If Verne agreed to rework the text into an adventure story, Hetzel would publish the story in his magazine. Beyond that, Hetzel offered Verne a long-term contract, and one of the most productive relationships in modern literary history was born.

In the preface to the first issue of his new magazine, Hetzel wrote, "We are attempting to create a journal for the entire family that is educational in the true sense of the word; one that is both serious and entertaining, one that would be of interest to parents and of profit to children. Education and recreation—these two terms, in our opinion, should complement each other.... Our ambition is to supplement the necessarily arduous lessons of the classroom with a lesson that is both more personal and more trenchant, to round out public education with family readings ... to fulfill the learning needs of the home, from the cradle to old age" (Evans, p. 24).

Hetzel's magazine was not the first to discover this niche market. In addition to *Musée des familles,* started in 1833, there was the *Journal of Education* in 1768, the *Magazine of Pictures* in 1833, and *World Tour* in 1860, the last a version of the modern-day *National Geographic.* But if Hetzel's magazine wasn't the only one of its kind, it was the best. With the most illustrations, with stories by the famous Verne, and with good binding and high-quality paper, Hetzel's magazine appealed to every generation of French readers with a taste for both adventure and science.

There were, however, downsides to the deal. Hetzel, exploiting Verne's hunger for fame, negotiated a deal in which Verne made the equivalent of $2 million throughout his relationship with the publisher and Hetzel made three times that much. In addition, Hetzel required Verne to work at breakneck speed. In the eleven years between publication of *Five Weeks in a Balloon* and *The Mysterious Island,* Verne wrote ten complete novels as well as a series of travel books dealing with the natural history of each region of France.

But the most disturbing aspect of this writer-publisher relationship was hinted at in Hetzel's own mission statement. "We have created a Magazine wherein everything is tailored to different age groups and nothing displeasing

to anyone," Hetzel wrote (Evans, p. 24). The articles and stories in this magazine were to be "fundamentally wholesome and good" (Evans, p. 24), and Hetzel worked closely with Verne to ensure that his stories met these criteria. It was a recipe for censorship. Hetzel struck many of Verne's references to God, as well as any mention of sex or sensuality. For instance, in the original manuscript of *Twenty Thousand Leagues Under the Sea,* the paintings in Captain Nemo's library included a "half-clothed woman" (Evans, p. 29) and a courtesan. These were changed to a Leonardo da Vinci virgin and a portrait by Titian, respectively.

At other times Hetzel attacked his star author. "Where's the science?" Hetzel wrote when Verne presented him with a manuscript of what would become *The Mysterious Island.* "They [the characters] are too dumb! ... 82 pages of text and not a single invention that a cretin couldn't figure out! ... It's a collection of totally listless beings; not a one of them is alert, lively, witty.... Drop all these guys and start again, from scratch" (Evans, p. 27).

Verne, eager to keep his name at the top of Hetzel's literary roster, compromised himself to please his editor. After Hetzel presented Verne with a laundry list of edits on his manuscript of *The Adventures of Captain Hatteras,* Verne responded in a letter, "I promise you that I will take them into account, for all your observations are correct.... I have not yet achieved total mastery over myself.... Have you ever found me to be recalcitrant when it came to making cuts or rearrangements? Didn't I follow your advice in *Five Weeks in a Balloon* by eliminating Joe's long narrative, and without pain?" (Evans, p. 27).

These influences—Hetzel's pedantic morality along with the proven formula of Verne's previous successes—gave rise to the Jules Verne Novel, a mold from which most of his works were cast. In later years especially, his formula sometimes became wooden; his plots hung like cloaks on the frames of his familiar characters. Whether a tale of adventures under the sea, scientific discoveries circling the moon, or a race against time around the earth, nearly all of Verne's novels track the adventures of a scientist-turned-hero, from Phileas Fogg to Professor Aronnax. The scientist-hero is aided by a worthy servant, and this pair is complemented by a "common man," a figure like Ned Land in *Twenty Thousand Leagues Under the Sea.* There is usually a library or a museum somewhere in the story—as in Nemo's paintings, books, and display shelves—as well as an obsessive desire to take bearings and locations, as in Aronnax's consultation of the naval charts for longitude and latitude or a group of people clambering up a mountain in *The Mysterious Island* to read the land. In addition, Verne's adventures nearly always take place in microcosmic societies: on a ship, in a balloon, in a submarine, on a space projectile, on an island, on the ice. The scientist-hero always returns to his departure point—for Aronnax in *Twenty Thousand Leagues Under the Sea* it is to dry land—to publish the discoveries made during the course of his trip. This recurring structure provided Verne a ready-made narrative arc that proved useful. Not only did it excuse the sometimes endless categorizing of scientific knowledge—" I end here this catalogue, which is somewhat dry, perhaps, but very exact, with a series of bony fish that I observed," Aronnax

writes (p. 260)—it also lent credence to the claims made in the course of the tale. By couching his findings in a book that serves the greater good of science, it is as if the fictional Professor Aronnax says, “It really did happen. We really did see an army of gigantic squid.” Verne’s novels are fiction presented as fact, and fact presented in fiction. The structure, formulaic as it was, served its author well.

Verne did sometimes complain of “the narrow confines that I’m condemned to move around in” (quoted in Evans, p. 26), although never very vocally. The major battle between Verne and Hetzel took place over the figure of Captain Nemo in *Twenty Thousand Leagues Under the Sea.* Verne conceived Nemo as a political fugitive, a rebel hiding from the world by diving in the *Nautilus* under the sea. He intended Nemo to be a Polish freedom fighter who, after rebelling against the czar of Russia, disappears into the deep. All the clues are there: Nemo’s portrait gallery of notable revolutionaries, his exclamation “The earth does not want new continents, but new men” (p. 100), his support of the Greek freedom fighters. But Hetzel did not want Nemo to be a Pole rebelling against Russia. At the time *Twenty Thousand Leagues Under the Sea* was in galleys, France had freshly signed a treaty with Russia. Hetzel, once a political refugee himself, thought Nemo’s motivation would anger Napoleon. Not willing to take the risk, he ordered Verne to change Nemo’s background to something more palatable to the Emperor.

Verne refused. “If Nemo had been a Pole whose wife died under the knout and the children perished in Siberia, and this Pole found himself confronted by a Russian ship with the possibility of destroying it, everyone would admit his right to vengeance,” Verne wrote to Hetzel. “[Nemo] is a generous person.... You understand that if I were creating this character again—which I am totally unable to do because I’ve been living with him for two years, I would not be able to see him any other way.... If I can’t be allowed to explain the reasons for his hatred ... I’ll remain silent about the causes or about his entire life, his nationality, etc.” (quoted in Lottman, p. 139). In the end, Verne struck Nemo’s history from the record, leaving clues about his fight against the oppressor and for the freedom of the oppressed without explaining the cause.

Far from “generous,” the new Nemo’s vengeful motivations are left obscure; instead of being justified in striking out, he seems to gain pleasure in killing for killing’s sake. Though less politically sensitive—Hetzel got what he wanted—Nemo became far more troubling: “That terrible avenger, a perfect archangel of hatred,” as Verne describes him (p. 289). The new Nemo holds free men against their will without explanation; he is freedom fighter turned taker of freedom, oppressed turned oppressor.

But he is also a king of the seas, wealthy beyond human dreams, capable of saving a family of whales from slaughter. Nemo plants a sinister black flag etched with the letter “N” as if to claim the ice, but he also cries over his lost companion and plays classical music in the dark. Verne’s rebellion against Hetzel gave birth to this singular character: complicated, unexplained, and at last unknowable, a true genius and an enigma to the very end.

In a later book—*The Mysterious Island,* published in 1874—Verne had the opportunity to set the record straight. Verne's cast of shipwrecked inventors discover Nemo in an ocean cave, the last surviving crew member of the *Nautilus.* Nemo tells his history: He is the Indian Prince Dakkar of Bundelkhand and a fighter in the 1857 Sepoy Rebellion against the British imperialists. The war claimed the lives of his wife and children. In response, Nemo took refuge in the sea, destroying British ships with "the right of vengeance." At last, it seems, Nemo's actions were justified by their cause.

From the publication of his first novel until the year of his death, Verne wrote one or two books a year, thus keeping himself at the top of the literary shortlist. He became a rich man who bought both a mansion in the provinces and a 38-ton yacht requiring a crew of ten. Although he achieved the fame and fortune he had set his sights on as a young man in Paris, the end of his life was bleak. In a series of stressful years, Verne was shot in the leg by a deranged relative; his presumed mistress died; his longtime friend and publisher, Hetzel, died; and his mother died. "I have entered into the darkest part of my life," he wrote in a letter. "All that's left for me ... are these intellectual distractions.... My character is profoundly changed, and I have received blows from which I will never recover.... I am rarely [happy] any more.... All told, I'm finishing up badly" (quoted in Evans, p. 81).

As an elderly man, Verne began to lose both his sight and his hearing, and he remained troubled by a delicate nervous and gastronomic system. In March 1905 the right side of his body became paralyzed. He was moved to an inside room within his mansion and prescribed absolute silence. On March 23 Verne's left side became paralyzed. He lapsed into a coma and died on the morning of March 24, 1905. He was seventy-seven years old.

"There can never be another Jules Verne," wrote Arthur C. Clarke, author of *2001: A Space Odyssey* and a dedicated reader of Verne, "for he was born at a unique moment in time" (quoted in Teeters, p. 112). Verne was present at the birth of phosphorus matches, detachable collars, double cuffs, letterheads, and postage stamps. He saw the introduction of Loire river steamboats, railroads, trams, electricity, the telegraph, the telephone, and the phonograph. He was born into the age of Alexander Graham Bell, the Industrial Revolution, Karl Marx, Darwin, the colonization of Africa, and wars of independence around the world. In his lifetime the Suez Canal opened, the Hyatt brothers invented celluloid film, an electric generator was built in the Alps, the electromagnetic theory of light was proven, and scientists for the first time ordered elements by the number of their electrons, which paved the way for the modern periodic table.

Science was, for Verne, humankind's greatest hope. At his best, he approached science with awe and naivete, making grandiose statements like, "When Science speaks, it behooves one to remain silent" (quoted in Evans, p. 48). Unlike many of his contemporaries, he did not consider the unknown aspects of the natural world beyond human understanding. "Let's reason this

out," he wrote in *The Mysterious Island* (Evans, p. 52), displaying his faith in science as the great, organizing force. Verne was an optimist; he believed in the ability of the human mind to perceive and to eventually gain mastery over earth's untamable mysteries through the discoveries of science.

His books accurately predicted many modern-day inventions, including the fax machine, the automobile, pollution, and even chain bookstores. In *Twenty Thousand Leagues Under the Sea,* he predicted batteries, searchlights, and the tasers used by America's police force. He foresaw the importance of electricity as a source of energy and suggested methods for air travel that later helped the first pilots get their feet off the ground. He anticipated the discovery of Darwin's "missing link" between humans and apes. He even provided the technical details of the first manned trip to the moon. When the Apollo 8 mission returned from its voyage, one of the astronauts wrote Verne's great-grandson a letter that praised the author's predictive abilities in *From the Earth to the Moon:* "Our space vehicle was launched from Florida, like Barbican's; it had the same weight and the same height, and it splashed down in the Pacific a mere two and a half miles from the point mentioned in the novel" (quoted in Teeters, p. 62).

In the more than 150 years since Verne's first novel came off the press, seven generations of scientists and explorers have read his books. "It is Jules Verne who guides me," wrote Antarctic explorer Richard E. Byrd (Teeters, p. 50). Jean Cocteau re-created Phileas Fogg's round-the-world journey, completing his itinerary in eighty-two days. Walt Disney was a Verne reader. So was Robert Goddard, the American physicist known as the father of rocketry, who stated in 1919 that humans would one day put a man on the moon. Auguste Piccard, the Swiss physicist who in 1932 ascended 55,500 feet into the stratosphere in a balloon, and his son Jacques, who in 1960 descended to the deepest depression in the Pacific Ocean in a diving bell, read Verne. "Everybody read Jules Verne and felt that tremendous power to dream, which was part of his erudite and naïve genius," wrote the author Ray Bradbury. "I consider myself as the illegitimate son of Jules Verne. We are very closely related" (quoted in Lynch, p. 113).

Though the accolades come in waves—and millions of readers worldwide have dreamed, traveled, and soared alongside Verne's pen—it would be a mistake to close the book on Verne so quickly. Verne was more than a talented writer, a crafter of adventure plots, and a master of the scientific imagination. Like his noble and tragic Nemo, Verne cannot be defined so easily.

After his death, Verne willed a half-ton bronze safe to his son. The safe stayed in the family from generation to generation, until his great-grandson, Jean Verne, discovered it in a dusty corner of a storage shed. In all that time, the safe had never been opened. When Jean Verne opened it, he discovered one of Verne's lost manuscripts. *Paris in the Twentieth Century was* published for the first time in 1994; it sold 100,000 copies and rose to the top of the French best-seller list.

True to style, the last of Verne's published books accurately forecast

twentieth-century life. But instead of Verne's characteristic optimism—" All that's within the limits of the possible must and will be accomplished" (quoted in Evans, p. 48)—*Paris au XXe siècle (Paris in the Twentieth Century)* presents the future as tragic instead of hopeful, and science as the great destroyer instead of the great hope. In the book, Verne's hero—this time a poet, not a scientist—wanders the streets of Paris looking for a publisher. But the citizens of Paris have forgotten the humanities and turned instead to the sterile comforts of life lived through science. Jobless and homeless, Verne's hero walks the perfect streets of the city destitute and alone. He spends his last penny buying a flower for his beloved, but when he delivers it he finds the house empty, the family gone. The book concludes with the hero lost in a winter graveyard amid tombs of forgotten novelists before he collapses and dies on the frozen, snowy ground.

What to make of this novel, of the dystopia it presents? In the context of Verne's other works, in which science unites more than it divides, how should we understand the message of this book? For the forty years of his writing life, Verne fed his readers a consistent diet of fancy based on fact, an optimism rooted in a solid belief in the positive potential of the human mind. But during those forty years, he discovered a truth more troubling: Humans might not be saved by science. We might destroy ourselves rather than thrive because of it. For modern readers, who live in a world shaped by Hiroshima and September 11, Verne's pessimism seems well placed. Just as in Verne's time science was used as a political and religious tool, so it is now used. Underneath the general optimism of Verne's novels lies a kernel of pessimistic truth: Science can do nothing but amplify the natural attributes of humankind, including hatred, violence, and vengeance.

It is interesting to note that even while Hetzel edited Verne to ensure the moral "wholesomeness" of his writing, he failed to strike the most violent and bloody scenes from Verne's manuscripts. To the modern reader, some of these passages seem to be drawn more from a horror movie than an educational magazine. One of these takes place at the end of *Twenty Thousand Leagues Under the Sea* with the sinking of the British ship. "A large mass cast a shadow on the water," Verne writes, "and that it might lose nothing of her agony, the *Nautilus* was going down into the abyss with her.... Her topmast, laden with victims, now appeared; then her spars, bending under the weight of men; and last of all, the top of her mainmast. Then the dark mass disappeared, and with it the dead crew, drawn down by the strong eddy" (pp. 288-289). Another can be read in Verne's *The Children of Captain Grant:* "Sudden knife thrusts by six robust warriors, and the victims dropped to the ground amid a widening pool of blood," Verne wrote. "A horrible scene of cannibalism followed ... a large mass of natives ... went into a bestial frenzy and pounced on the lifeless remains of the victims. In less time than it takes to describe it, these bodies, though still warm, were torn apart, chopped up and reduced to bits and pieces.... [The cannibals] fought over it, struggled, and argued over the smallest morsel. Warm drops of blood splattered over this repulsive horde, producing a red mist within which they swarmed" (quoted in Evans, p. 43).

Is this Verne? The same Verne whose books have been read with flashlights under tented sheets by seven generations of children? The Verne who wrote “there is logic to everything here on earth” (Evans, p. 52)? The Verne who thought that scientific discovery would allow man to “reign as master over [the earth], and bring out its very best” (Evans, p. 48)?

Indeed it is. Verne may have been among the first to write fantasy based on fact, but more importantly he was also the first to recognize the romance and lyricism inherent in science. He saw with clear eyes the way in which science and the pursuit of the unknown underscores fundamental qualities of the human condition: love, hate, envy, ambition, and the dangers of unchecked curiosity. Like the Greek hero Menelaus traveling across the Aegean for bloodshed, so too Nemo in his *Nautilus.* Verne’s scientist-heroes don’t always come home safely. After reaching their goal, some of them go insane.

It is perhaps because of this darker vision, hidden beneath the generally unbroken surface of his optimistic faith in science, that Verne continues to be read today. Long after the invention of the telephone, in a time when submarines cease to be remarkable, Verne’s books still educate as they entertain. They still have something to teach us. Nemo stands as a dark image of human vengeance. He shows us the dangers of fury, the negative potential of technology let loose on humankind. The book you hold in your hands is Verne’s masterpiece because even while he takes us to the limits of the human imagination, Nemo takes us to the depths of the human heart.

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PART ONE

Chapter I

A Shifting Reef

THE YEAR 1866 WAS signalized by a remarkable incident, a mysterious and inexplicable phenomenon, which doubtless no one has yet forgotten. Not to mention rumors which agitated the maritime population, and excited the public mind, even in the interior of continents, seafaring men were particularly excited. Merchants, common sailors, captains of vessels, skippers, both of Europe and America, naval officers of all countries, and the governments of several states on the two continents, were deeply interested in the matter.

For some time past, vessels had been met by "an enormous thing," a long object spindle-shaped, occasionally phosphorescent, and infinitely larger and more rapid in its movements than a whale.[1]

The facts relating to this apparition (entered in various log-books) agreed in most respects as to the shape of the object or creature in question, the untiring rapidity of its movements, its surprising power of locomotion, and the peculiar life with which it seemed endowed. If it was a cetacean,[a] it surpassed in size all those hitherto classified in science. Taking into consideration the mean of observations made at divers times—rejecting the timid estimate of those who assigned to this object a length of two hundred feet, equally with the exaggerated opinions which set it down as a mile in width and three in length—we might fairly conclude that this mysterious being surpassed greatly all dimensions admitted by the ichthyologists[b] of the day, if it existed at all. And that it did exist was an undeniable fact; and, with that tendency which disposes the human mind in favor of the marvelous, we can understand the excitement produced in the entire world by this supernatural apparition . As to classing it in the list of fables, the idea was out of the question.

On the 20th of July, 1866, the steamer *Governor Higginson,* of the Calcutta and Burnach Steam Navigation Company, had met this moving mass five miles off the east coast of Australia. Captain Baker thought at first that he was in the presence of an unknown sand-bank; he even prepared to determine its exact position, when two columns of water, projected by the inexplicable object, shot with a hissing noise a hundred and fifty feet up into the air. Now, unless the sand-bank had been submitted to the intermittent eruption of a geyser, the *Governor Higginson* had to do neither more nor less than with an aquatic mammal, unknown till then, which threw up from its blow-holes columns of water mixed with air and vapor.

Similar facts were observed on the 23d of July in the same year, in the Pacific Ocean, by the *Columbus,* of the West India and Pacific Steam Navigation Company. But this extraordinary cetaceous creature could transport itself from one place to another with surprising velocity; as, in an interval of three days, the *Governor Higginson* and the *Columbus* had observed it at two different points of the chart, separated by a distance of more than seven hundred nautical leagues.[2]

Fifteen days later, two thousand miles further off, the *Helvetia,* of the Compagnie-Nationale, and the *Shannon,* of the Royal Mail Steamship Company, sailing to windward in that portion of the Atlantic lying between the United States and Europe, respectively signaled the monster to each other in 42° 15' N. lat. and 60° 35' W. long. In these simultaneous observations, they thought themselves justified in estimating the minimum length of the mammal at more than three hundred and fifty feet, as the *Shannon* and *Helvetia* were of smaller dimensions than it, though they measured three hundred feet over all.

Now the largest whales, those which frequent those parts of the sea round the Aleutian, Kulammak, and Umgullich Islands,[c] have never exceeded the length of sixty yards, if they attain that.

These reports arriving one after the other, with fresh observations made on board the transatlantic ship *Pereira,* a collision which occurred between the *Etna* of the Inman line and the monster, a *proces verbal* directed by the officers of the French frigate[d] *Normandie,* a very accurate survey made by the staff of Commodore Fitz-James on board the *Lord Clyde* greatly influenced public opinion. Light-thinking people jested upon the phenomenon, but grave, practical countries, such as England, America, and Germany, treated the matter more seriously.

In every place of great resort the monster was the fashion. They sang of it in the cafés, ridiculed it in the papers, and represented it on the stage. All kinds of stories were circulated regarding it. There appeared in the papers caricatures of every gigantic and imaginary creature, from the white whale, the terrible "Moby Dick"[3] of hyperborean regions, to the immense kraken[e] whose tentacles could entangle a ship of five hundred tons, and hurry it into the abyss of the ocean. The legends of ancient times were even resuscitated, and the opinions of Aristotle and Pliny revived, who admitted the existence of these monsters,[4] as well as the Norwegian tales of Bishop Pontoppidan, the accounts of Paul Heggede, and, last of all, the reports of Mr. Harrington (whose good faith no one could suspect), who affirmed that, being on board the *Castillan,* in 1857, he had seen this enormous serpent, which had never until that time frequented any other seas but those of the ancient "Constitutionnel."[f]

Then burst forth the interminable controversy between the credulous and the incredulous in the societies of savants and scientific journals. "The question of the monster" inflamed all minds. Editors of scientific journals, quarreling with believers in the supernatural, spilled seas of ink during this memorable campaign, some even drawing blood; for, from the sea-serpent,

they came to direct personalities.

For six months war was waged with various fortune in the leading articles of the Geographical Institution of Brazil, the Royal Academy of Science of Berlin, the British Association, the Smithsonian Institution of Washington, in the discussions of the "Indian Archipelago," of the Cosmos of the Abbé Moigno, in the Mittheilungen of Petermann, in the scientific chronicles of the great journals of France and other countries. The cheaper journals replied keenly and with inexhaustible zest. These satirical writers parodied a remark of Linnæus,[5] quoted by the adversaries of the monster, maintaining that "nature did not make fools," and adjured their contemporaries not to give the lie to nature, by admitting the existence of krakens, sea-serpents, "Moby Dicks," and other lucubrations of delirious sailors. At length an article in a well-known satirical journal by a favorite contributor, the chief of the staff, settled the monster, like Hippolytus,[6] giving it the death-blow amid a universal burst of laughter. Wit had conquered science.

During the first months of the year 1867, the question seemed buried never to revive, when new facts were brought before the public. It was then no longer a scientific problem to be solved, but a real danger seriously to be avoided. The question took quite another shape. The monster became a small island, a rock, a reef, but a reef of indefinite and shifting proportions.

On the 5th of March, 1867, the *Moravian,* of the Montreal Ocean Company, finding herself during the night in 27° 30' lat. and 72° 15' long., struck on her starboard quarter a rock, marked in no chart for that part of the sea. Under the combined efforts of the wind and its four hundred horsepower, it was going at the rate of thirteen knots. Had it not been for the superior strength of the hull of the *Moravian,* she would have been broken by the shock, and gone down with the 237 passengers she was bringing home from Canada.

The accident happened about five o'clock in the morning, as the day was breaking. The officers of the quarter-deck hurried to the after-part of the vessel. They examined the sea with the most scrupulous attention. They saw nothing but a strong eddy about three cables' length distant, as if the surface had been violently agitated. The bearings of the place were taken exactly, and the *Moravian* continued its route without apparent damage. Had it struck on a submerged rock, or on an enormous wreck? They could not tell; but on examination of the ship's bottom when undergoing repairs, it was found that part of her keel was broken.

This fact, so grave in itself, might perhaps have been forgotten like many others, if, three weeks after, it had not been re-enacted under similar circumstances. But, thanks to the nationality of the victim of the shock, thanks to the reputation of the company to which the vessel belonged, the circumstance became extensively circulated.

The 13th of April, 1867, the sea being beautiful, the breeze favorable, the *Scotia,* of the Cunard Company's line,[7] found herself in 15° 12' long. and 45°

37’ lat. She was going at the speed of thirteen knots and a half.

At seventeen minutes past four in the afternoon, while the passengers were assembled at lunch in the great saloon, a slight shock was felt on the hull of the *Scotia,* on her quarter, a little aft of the port paddle.

The *Scotia* had not struck, but she had been struck, and seemingly by something rather sharp and penetrating than blunt. The shock had been so light that no one had been alarmed, had it not been for the shouts of the carpenter’s watch, who rushed on to the bridge, exclaiming, “We are sinking! We are sinking!” At first the passengers were much frightened, but Captain Anderson hastened to reassure them. The danger could not be imminent. The *Scotia,* divided into seven compartments by strong partitions, could brave with impunity any leak. Captain Anderson went down immediately into the hold. He found that the sea was pouring into the fifth compartment; and the rapidity of the influx proved that the force of the water was considerable. Fortunately this compartment did not hold the boilers, or the fires would have been immediately extinguished. Captain Anderson ordered the engines to be stopped at once, and one of the men went down to ascertain the extent of the injury. Some minutes afterward they discovered the existence of a large hole, of two yards in diameter, in the ship’s bottom. Such a leak could not be stopped, and the *Scotia,* her paddles half submerged, was obliged to continue her course. She was then three hundred miles from Cape Clear, and after three days’ delay, which caused great uneasiness in Liverpool, she entered the basin of the company.

The engineers visited the *Scotia,* which was put in dry-dock. They could scarcely believe it possible; at two yards and a half below water-mark was a regular rent, in the form of an isosceles triangle. The broken place in the iron plates was so perfectly defined that it could not have been more neatly done by a punch. It was clear, then, that the instrument producing the perforation was not of a common stamp; and after having been driven with prodigious strength, and piercing an iron plate one and three-eighth inches thick, had withdrawn itself by a retrograde motion truly inexplicable.

Such was the last fact, which resulted in exciting once more the torrent of public opinion. From this moment all unlucky casualties which could not be otherwise accounted for were put down to the monster.

Upon this imaginary creature rested the responsibility of all these shipwrecks, which unfortunately were considerable; for of three thousand ships whose loss was annually recorded at Lloyd’s,[8] the number of sailing and steamships supposed to be totally lost, from the absence of all news, amounted to not less than two hundred.

Now, it was the “monster” who, justly or unjustly, was accused of their disappearance, and, thanks to it, communication between the different continents became more and more dangerous. The public demanded peremptorily that the seas should at any price be relieved from this formidable cetacean.

Chapter II

Pro and Con

AT THE PERIOD WHEN these events took place, I had just returned from a scientific research in the disagreeable territory of Nebraska, in the United States. In virtue of my office as Assistant Professor in the Museum of Natural History in Paris, the French government had attached me to that expedition. After six months in Nebraska, I arrived in New York toward the end of March, laden with a precious collection. My departure for France was fixed for the first days in May. Meanwhile, I was occupying myself in classifying my mineralogical, botanical, and zoological riches, when the accident happened to the *Scotia*.

I was perfectly up in the subject which was the question of the day. How could I be otherwise? I had read and reread all the American and European papers without being any nearer a conclusion. This mystery puzzled me. Under the impossibility of forming an opinion, I jumped from one extreme to the other. That there really was something could not be doubted, and the incredulous were invited to put their finger on the wound of the *Scotia*.

On my arrival at New York, the question was at its height. The hypothesis of the floating island, and the unapproachable sand-bank, supported by minds little competent to form a judgment, was abandoned. And, indeed, unless this shoal had a machine in its stomach, how could it change its position with such astonishing rapidity?

From the same cause, the idea of a floating hull of an enormous wreck was given up.

There remained then only two possible solutions of the question, which created two distinct parties: on one side, those who were for a monster of colossal strength; on the other, those who were for a submarine vessel of enormous motive power.

But this last hypothesis, plausible as it was, could not stand against inquiries made in both worlds. That a private gentleman should have such a machine at his command was not likely. Where, when, and how was it built? And how could its construction have been kept secret? Certainly a government might possess such a destructive machine. And in these disastrous times, when the ingenuity of man has multiplied the power of weapons of war, it was possible that, without the knowledge of others, a state might try to work such

a formidable engine. After the chassepots[h] came the torpedoes, after the torpedoes the submarine rams, then—the reaction. At least, I hope so.

But the hypothesis of a war-machine fell before the declaration of governments. As public interest was in question, and transatlantic communications suffered, their veracity could not be doubted. But, how admit that the construction of this submarine boat had escaped the public eye? For a private gentleman to keep the secret under such circumstances would be very difficult, and for a state whose every act is persistently watched by powerful rivals, certainly impossible.

After inquiries made in England, France, Russia, Prussia, Spain, Italy, and America, even in Turkey, the hypothesis of a submarine monitor[i] was definitely rejected.

Upon my arrival in New York several persons did me the honor of consulting me on the phenomenon in question. I had published in France a work in quarto,[j] in two volumes, entitled "Mysteries of the Great Submarine Grounds." This book, highly approved of in the learned world, gained for me a special reputation in this rather obscure branch of Natural History. My advice was asked. As long as I could deny the reality of the fact, I confined myself to a decided negative. But soon finding myself driven into a corner, I was obliged to explain myself categorically. And even "the Honorable Pierre Aronnax, Professor in the Museum of Paris," was called upon by the *New York Herald* to express a definite opinion of some sort. I did something. I spoke for want of power to hold my tongue. I discussed the question in all its forms, politically and scientifically; and I give here an extract from a carefully studied article which I published in the number of the 30th of April. It ran as follows:

"After examining one by one the different hypotheses, rejecting all other suggestions, it becomes necessary to admit the existence of a marine animal of enormous power.

"The great depths of the ocean are entirely unknown to us. Soundings cannot reach them. What passes in those remote depths—what beings live, or can live, twelve or fifteen miles beneath the surface of the waters—what is the organization of these animals—we can scarcely conjecture. However, the solution of the problem submitted to me may modify the form of the dilemma. Either we do know all the varieties of beings which people our planet, or we do not. If we do not know them all, if Nature still has secrets in ichthyology for us, nothing is more conformable to reason than to admit the existence of fishes, or cetaceans of other kinds, or even of new species, of an organization formed to inhabit the strata inaccessible to soundings, and which an accident of some sort, either fantastical or capricious, has brought at long intervals to the upper level of the ocean.

"If, on the contrary, we do know all living kinds, we must necessarily seek for the animal in question among those marine beings already classed; and, in that case, I should be disposed to admit the existence of a gigantic narwhal.

"The common narwhal, or unicorn of the sea, often attains a length of sixty feet. Increase its size fivefold or tenfold, give it strength proportionate to its size, lengthen its destructive weapons, and you obtain the animal required. It will have the proportions determined by the officers of the *Shannon,* the instrument required by the perforation of the *Scotia,* and the power necessary to pierce the hull of the steamer.

"Indeed the narwhal is armed with a sort of ivory sword, a halberd, [k] according to the expression of certain naturalists. The principal tusk has the hardness of steel. Some of these tusks have been found buried in the bodies of whales, which the unicorn always attacks with success. Others have been drawn out, not without trouble, from the bottoms of ships, which they had pierced through and through, as a gimlet pierces a barrel. The Museum of the Faculty of Medicine of Paris possesses one of these defensive weapons, two yards and a quarter in length, and fifteen inches in diameter at the base.

"Very well! Suppose this weapon to be six times stronger, and the animal ten times more powerful, launch it at the rate of twenty miles an hour, and you obtain a shock capable of producing the catastrophe required. Until further information, therefore, I shall maintain it to be a sea-unicorn of colossal dimensions, armed, not with a halberd, but with a real spur, as the armored frigates, or the 'rams' of war, whose massiveness and motive power it would possess at the same time. Thus may this inexplicable phenomenon be explained, unless there be something over and above all that one has ever conjectured, seen, perceived, or experienced; which is just within the bounds of possibility."

These last words were cowardly on my part, but, up to a certain point, I wished to shelter my dignity as professor, and not give too much cause for laughter to the Americans, who laugh well when they do laugh. I reserved for myself a way of escape. In effect, however, I admitted the existence of the "monster." My article was warmly discussed, which procured it a high reputation. It rallied round it a certain number of partisans. The solution it proposed gave, at least, full liberty to the imagination. The human mind delights in grand conceptions of supernatural beings. And the sea is precisely their best vehicle, the only medium through which these giants (against which terrestrial animals, such as elephants or rhinoceroses, are as nothing) can be produced or developed.

The industrial and commercial papers treated the question chiefly from this point of view. The *Shipping and Mercantile Gazette,* the *Lloyds' List,* the *Packet-Boat* and the *Maritime and Colonial Review,* all papers devoted to insurance companies which threatened to raise their rates of premium, were unanimous on this point. Public opinion had been pronounced. The United States was the first in the field; and in New York they made preparations for an expedition destined to pursue this narwhal. A frigate of great speed, the *Abraham Lincoln,* was put in commission, as soon as possible. The arsenals were opened to Commander Farragut,[8] who hastened the arming of his frigate; but, as it always happens, the moment it was decided to pursue the monster, the monster did not appear. For two months no one heard it spoken

of. No ship met with it. It seemed as if this unicorn knew of the plots weaving around it. It had been so much talked of, even through the Atlantic cable, that jesters pretended that this slender fly had stopped a telegram on its passage, and was making the most of it.

So when the frigate had been armed for a long campaign, and provided with formidable fishing apparatus, no one could tell what course to pursue. Impatience grew apace, when, on the 2d of June, they learned that a steamer of the line of San Francisco, from California to Shanghai, had seen the animal three weeks before in the North Pacific Ocean. The excitement caused by this news was extreme. The ship was revictualed and well stocked with coal.

Three hours before the *Abraham Lincoln* left Brooklyn pier, I received a letter worded as follows:

To M. ARONNAX, PROFESSOR IN THE MUSEUM OF PARIS,

FIFTH AVENUE HOTEL, NEW YORK.

SIR:

If you will consent to join the *Abraham Lincoln* in this expedition, the government of the United States will with pleasure see France represented in the enterprise. Commander Farragut has a cabin at your disposal.

VERY CORDIALLY YOURS,

J. B. HOBSON

SECRETARY OF MARINE

Chapter III

I Form My Resolution

THREE SECONDS BEFORE THE arrival of J. B. Hobson's letter, I no more thought of pursuing the unicorn than of attempting the passage of the North Sea.[9] Three seconds after reading the letter of the Honorable Secretary of Marine, I felt that my true vocation, the sole end of my life, was to chase this disturbing monster, and purge it from the world.

But I had just returned from a fatiguing journey, weary, and longing for repose. I aspired to nothing more than again seeing my country, my friends, my little lodging by the Jardin des Plantes, my dear and precious collections. But nothing could keep me back! I forgot all—fatigue, friends, and collections—and accepted without hesitation the offer of the American government.

"Besides," thought I, "all roads lead back to Europe; and the unicorn may be amiable enough to hurry me toward the coast of France. This worthy animal may allow itself to be caught in the seas of Europe (for my particular benefit), and I will not bring back less than half a yard of his ivory halberd to the Museum of Natural History." But in the meanwhile I must seek this narwhal in the North Pacific Ocean, which, to return to France, was taking the road to the antipodes.

"Conseil," I called in an impatient voice.

Conseil was my servant, a true, devoted Flemish boy, who had accompanied me in all my travels. I liked him, and he returned the liking well. He was phlegmatic by nature, regular from principle, zealous from habit, evincing little disturbance at the different surprises of life, very quick with his hands, and apt at any service required of him, and, despite his name, never giving advice—even when asked for it.

Conseil had followed me for the last ten years wherever science led. Never once did he complain of the length or fatigue of a journey, never make an objection to pack his portmanteau for whatever country it might be, or however far away, whether China or Congo. Besides all this, he had good health, which defied all sickness, and solid muscles, but no nerves; good morals are understood. This boy was thirty years old, and his age to that of his master as fifteen to twenty. May I be excused for saying that I was forty years old?

But Conseil had one fault—he was ceremonious to a degree, and would

never speak to me but in the third person, which was sometimes provoking.

“Conseil,” said I again, beginning with feverish hands to make preparations for my departure.

Certainly, I was sure of this devoted boy. As a rule, I never asked him if it were convenient for him or not to follow me in my travels; but this time the expedition in question might be prolonged, and the enterprise might be hazardous in pursuit of an animal capable of sinking a frigate as easily as a nutshell. Here there was matter for reflection even to the most impassive man in the world. What would Conseil say?

“Conseil,” I called a third time.

Conseil appeared.

“Did you call, sir?” said he, entering.

“Yes, my boy, make preparations for me and yourself too. We leave in two hours.”

“As you please, sir,” replied Conseil quietly.

“Not an instant to lose; lock in my trunk all traveling utensils, coats, shirts, and stockings—without counting—as many as you can, and make haste.”

“And your collections, sir?” observed Conseil.

“We will think of them by and by.”

“What! the archiotherium, the hyracotherium, the oreodons, the cheropotamus,[l] and the other skins?”

“They will keep them at the hotel.”

“And your live Babiroussa,[m] sir?”

“They will feed it during our absence; besides, I will give orders to forward our menagerie to France.”

“We are not returning to Paris, then?” said Conseil.

“Oh! Certainly,” I answered evasively, “by making a curve.”

“Will the curve please you, sir?”

“Oh! It will be nothing, not quite so direct a road, that is all. We take our passage in the *Abraham Lincoln.”*

“As you think proper, sir,” coolly replied Conseil.

“You see, my friend, it has to do with the monster—the famous narwhal. We are going to purge it from the seas. The author of a work in quarto, in two volumes, on the ‘Mysteries of the Great Submarine Grounds’ cannot forbear embarking with Commander Farragut. A glorious mission, but a dangerous

one! We cannot tell where we may go; these animals can be very capricious. But we will go whether or no; we have got a captain who is pretty wide awake."

I opened a credit account for Babiroussa, and, Conseil following, I jumped into a cab. Our luggage was transported to the deck of the frigate immediately. I hastened on board and asked for Commander Farragut. One of the sailors conducted me to the poop,[n] where I found myself in the presence of a good-looking officer, who held out his hand to me.

"Monsieur Pierre Aronnax?" said he.

"Himself," replied I. "Commander Farragut?"

"You are welcome, professor; your cabin is ready for you."

I bowed, and desired to be conducted to the cabin destined for me.

The *Abraham Lincoln* had been well chosen and equipped for her new destination. She was a frigate of great speed, fitted with high-pressure engines which admitted a pressure of seven atmospheres. Under this the *Abraham Lincoln* attained the mean speed of nearly eighteen knots and a third an hour —a considerable speed, but, nevertheless, insufficient to grapple with this gigantic cetacean.

The interior arrangements of the frigate corresponded to its nautical qualities. I was well satisfied with my cabin, which was in the after-part, opening upon the gun room.

"We shall be well off here," said I to Conseil.

"As well, by your honor's leave, as a hermit crab in the shell of a whelk," said Conseil.

I left Conseil to stow our trunks conveniently away, and remounted the poop in order to survey the preparations for departure.

At that moment Commander Farragut was ordering the last moorings to be cast loose which held the *Abraham Lincoln* to the pier of Brooklyn. So in a quarter of an hour, perhaps less, the frigate would have sailed without me. I should have missed this extraordinary, supernatural, and incredible expedition, the recital of which may well meet with some skepticism.

But Commander Farragut would not lose a day nor an hour in scouring the seas in which the animal had been sighted. He sent for the engineer.

"Is the steam full on?" asked he.

"Yes, sir," replied the engineer.

"Go ahead," cried Commander Farragut.

The quay[o] of Brooklyn, and all that part of New York bordering on the

East River, was crowded with spectators. Three cheers burst successively from five hundred thousand throats; thousands of handkerchiefs were waved above the heads of the compact mass, saluting the *Abraham Lincoln,* until she reached the waters of the Hudson, at the point of that elongated peninsula which forms the town of New York. Then the frigate, following the coast of New Jersey along the right bank of the beautiful river, covered with villas, passed between the forts, which saluted her with their heaviest guns. The *Abraham Lincoln* answered by hoisting the American colors three times, whose thirty-nine stars[10] shone resplendent from the mizzen-peak;[p] then modifying its speed to take the narrow channel marked by buoys placed in the inner bay formed by Sandy Hook Point, it coasted the long sandy beach, where some thousands of spectators gave it one final cheer. The escort of boats and tenders still followed the frigate, and did not leave her until they came abreast of the light-ship whose two lights marked the entrance of New York Channel.

Six bells struck, the pilot got into his boat, and rejoined the little schooner which was waiting under our lee, the fires were made up, the screw beat the waves more rapidly, the frigate skirted the low yellow coast of Long Island; and at eight bells, after having lost sight in the northwest of the lights of Fire Island, she ran at full steam on to the dark waters of the Atlantic.

Chapter IV

Ned Land

CAPTAIN FARRAGUT WAS A good seaman, worthy of the frigate he commanded. His vessel and he were one. He was the soul of it. On the question of the cetacean there was no doubt in his mind, and he would not allow the existence of the animal to be disputed on board. He believed in it as certain good women believe in the leviathan[q]—by faith, not by reason. The monster did exist, and he had sworn to rid the seas of it. He was a kind of Knight of Rhodes, a second Dieudonné de Gozon, going to meet the serpent which desolated the island. Either Captain Farragut would kill the narwhal, or the narwhal would kill the captain. There was no third course.

The officers on board shared the opinion of their chief. They were ever chatting, discussing, and calculating the various chances of a meeting, watching narrowly the vast surface of the ocean. More than one took up his quarters voluntarily in the cross-trees, who would have cursed such a berth under any other circumstances. As long as the sun described its daily course, the rigging was crowded with sailors, whose feet were burned to such an extent by the heat of the deck as to render it unbearable; still the *Abraham Lincoln* had not yet breasted the suspected waters of the Pacific. As to the ship's company, they desired nothing better than to meet the unicorn, to harpoon it, hoist it on board, and dispatch it. They watched the sea with eager attention.

Besides, Captain Farragut had spoken of a certain sum of two thousand dollars, set apart for whoever should first sight the monster, were he cabin-boy, common seaman, or officer.

I leave you to judge how eyes were used on board the *Abraham Lincoln.*

For my own part, I was not behind the others, and left to no one my share of daily observations. The frigate might have been called the Argus, for a hundred reasons.[11] Only one among us, Conseil, seemed to protest by his indifference against the question which so interested us all, and seemed to be out of keeping with the general enthusiasm on board.

I have said that Captain Farragut had carefully provided his ship with every apparatus for catching the gigantic cetacean. No whaler had ever been better armed. We possessed every known engine, from the harpoon thrown by the hand to the barbed arrows of the blunderbuss, and the explosive balls of

the duck-gun. On the forecastle lay the perfection of a breech-loading gun, very thick at the breech, and very narrow in the bore, the model of which had been in the Exhibition of 1867. This precious weapon of American origin could throw with ease a conical projectile of nine pounds to a mean distance of ten miles.

Thus the *Abraham Lincoln* wanted for no means of destruction; and, what was better still, she had on board Ned Land, the prince of harpooners.

Ned Land was a Canadian, with an uncommon quickness of hand, and who knew no equal in his dangerous occupation. Skill, coolness, audacity, and cunning he possessed in a superior degree, and it must be a cunning whale or a singularly "cute" cachalot[r] to escape the stroke of his harpoon.

Ned Land was about forty years of age; he was a tall man (more than six feet high), strongly built, grave and taciturn, occasionally violent, and very passionate when contradicted. His person attracted attention, but above all the boldness of his look, which gave a singular expression to his face.

Who calls himself Canadian calls himself French; and little communicative as Ned Land was, I must admit that he took a certain liking for me. My nationality drew him to me, no doubt. It was an opportunity for him to talk, and for me to hear, that old language of Rabelais, which is still in use in some Canadian provinces.[12] The harpooner's family was originally from Quebec, and was already a tribe of hardy fishermen when this town belonged to France.

Little by little, Ned Land acquired a taste for chatting, and I loved to hear the recital of his adventures in the polar seas. He related his fishing, and his combats, with natural poetry of expression; his recital took the form of an epic poem, and I seemed to be listening to a Canadian Homer singing the Iliad of the regions of the North.

I am portraying this hardy companion as I really knew him. We are old friends now, united in that unchangeable friendship which is born and cemented amid extreme dangers. Ah, brave Ned! I ask no more than to live a hundred years longer, that I may have more time to dwell the longer on your memory.

Now, what was Ned Land's opinion upon the question of the marine monster? I must admit that he did not believe in the unicorn, and was the only one on board who did not share that universal conviction. He even avoided the subject, which I one day thought it my duty to press upon him. One magnificent evening, the 25th of June—that is to say, three weeks after our departure—the frigate was abreast of Cape Blanc, thirty miles to leeward[s] of the coast of Patagonia. We had crossed the Tropic of Capricorn, and the Straits of Magellan opened less than seven miles to the south. Before eight days were over, the *Abraham Lincoln* would be plowing the waters of the Pacific.

Seated on the poop, Ned Land and I were chatting of one thing and another as we looked at this mysterious sea, whose great depths had up to this

time been inaccessible to the eye of man. I naturally led up the conversation to the giant unicorn, and examined the various chances of success or failure of the expedition. But seeing that Ned Land let me speak without saying too much himself, I pressed him more closely.

"Well, Ned," said I, "is it possible that you are not convinced of the existence of this cetacean that we are following? Have you any particular reason for being so incredulous?"

The harpooner looked at me fixedly for some moments before answering, struck his broad forehead with his hand (a habit of his), as if to collect himself, and said at last, "Perhaps I have, Mr. Aronnax."

"But, Ned, you, a whaler by profession, familiarized with all the great marine mammalia—you, whose imagination might easily accept the hypothesis of enormous cetaceans—*you* ought to be the last to doubt under such circumstances!"

"That is just what deceives you, professor," replied Ned. "That the vulgar should believe in extraordinary comets traversing space, and in the existence of antediluvian monsters in the heart of the globe, may well be; but neither astronomers nor geologists believe in such chimeras.[t] As a whaler, I have followed many a cetacean, harpooned a great number, and killed several; but, however strong or well-armed they may have been, neither their tails nor their weapons would have been able even to scratch the iron plates of a steamer."

"But, Ned, they tell of ships which the teeth of the narwhal have pierced through and through."

"Wooden ships—that is possible," replied the Canadian; "but I have never seen it done; and, until further proof, I deny that whales, cetaceans, or sea-unicorns could ever produce the effect you describe."

"Well, Ned, I repeat it with a conviction resting on the logic of facts. I believe in the existence of a mammal powerfully organized, belonging to the branch of vertebrata, like the whales, the cachalots, or the dolphins, and furnished with a horn of defense of great penetrating power."

"Hum!" said the harpooner, shaking his head with the air of a man who would not be convinced.

"Notice one thing, my worthy Canadian," I resumed. "If such an animal is in existence, if it inhabits the depths of the ocean, if it frequents the strata lying miles below the surface of the water, it must necessarily possess an organization the strength of which would defy all comparison."

"And why this powerful organization?" demanded Ned.

"Because it requires incalculable strength to keep one's self in these strata and resist the pressure. Listen to me. Let us admit that the pressure of the atmosphere is represented by the weight of a column of water thirty-two feet high. In reality the column of water would be shorter, as we are speaking of

sea-water, the density of which is greater than that of fresh water. Very well, when you dive, Ned, as many times thirty-two feet of water as there are above you, so many times does your body bear a pressure equal to that of the atmosphere, that is to say 15 lbs. for each square inch of its surface. It follows, then, that at 320 feet this pressure equals that of 10 atmospheres, of 100 atmospheres at 3,200 feet, and of 1,000 atmospheresat 32,000 feet, that is, about 6 miles; which is equivalent to saying that, if you could attain this depth in the ocean, each square ⅜ of an inch of the surface of your body would bear a pressure of 5,600 lbs. Ah! my brave Ned, do you know how many square inches you carry on the surface of your body?"

"I have no idea, Mr. Aronnax."

"About 6,500; and, as in reality the atmospheric pressure is about 15 lbs. to the square inch, your 6,500 square inches bear at this moment a pressure of 97,500 lbs."

"Without my perceiving it?"

"Without your perceiving it. And if you are not crushed by such a pressure, it is because the air penetrates the interior of your body with equal pressure. Hence perfect equilibrium between the interior and exterior pressure, which thus neutralize each other, and which allows you to bear it without inconvenience. But in the water it is another thing."

"Yes, I understand," replied Ned, becoming more attentive, "because the water surrounds me, but does not penetrate."

"Precisely, Ned; so that at 32 feet beneath the surface of the sea you would undergo a pressure of 97,500 lbs.; at 320 feet, ten times that pressure; at 3,200 feet, a hundred times that pressure; lastly, at 32,000 feet, a thousand times that pressure would be 97,500,000 lbs.—that is to say, that you would be flattened as if you had been drawn from the plates of an hydraulic machine!"

"The devil!" exclaimed Ned.

"Very well, my worthy harpooner, if some vertebrate, several hundred yards long, and large in proportion, can maintain itself in such depths—of those whose surface is represented by millions of square inches, that is by tens of millions of pounds, we must estimate the pressure they undergo. Consider, then, what must be the resistance of their bony structure, and the strength of their organization to withstand such pressure!"

"Why!" exclaimed Ned Land. "They must be made of iron plates eight inches thick, like the armored frigates."

"As you say, Ned. And think what destruction such a mass would cause if hurled with the speed of an express train against the hull of a vessel."

"Yes—certainly—perhaps," replied the Canadian, shaken by these figures, but not yet willing to give in.

“Well, have I convinced you?”

“You have convinced me of one thing, sir, which is, that if such animals do exist at the bottom of the seas, they must necessarily be as strong as you say.”

“But if they do not exist, mine obstinate harpooner, how explain the accident to the *Scotia?”*

Chapter V

At a Venture

THE VOYAGE OF THE *Abraham Lincoln* was for a long time marked by no special incident. But one, circumstance happened which showed the wonderful dexterity of Ned Land, and proved what confidence we might place in him.

The 30th of June, the frigate spoke to some American whalers, from whom we learned that they knew nothing about the narwhal. But one of them, the captain of the *Monroe,* knowing that Ned Land had shipped on board the *Abraham Lincoln,* begged for his help in chasing a whale they had in sight. Commander Farragut, desirous of seeing Ned Land at work, gave him permission to go on board the *Monroe.* And fate served our Canadian so well that, instead of one whale, he harpooned two with a double blow, striking one straight to the heart and catching the other after some minutes' pursuit.

Decidedly, if the monster ever had to do with Ned Land's harpoon, I would not bet in its favor.

The frigate skirted the southeast coast of America with great rapidity. The 3d of July we were at the opening of the Straits of Magellan, level with Cape Vierges. But Commander Farragut would not take a tortuous passage, but doubled Cape Horn.

The ship's crew agreed with him. And certainly it was possible that they might meet the narwhal in this narrow pass. Many of the sailors affirmed that the monster could not pass there, "that he was too big for that!"

The 6th of July, about three o'clock in the afternoon, the *Abraham Lincoln,* at fifteen miles to the south, doubled the solitary island, this last rock at the extremity of the American continent to which some Dutch sailors gave the name of their native town, Cape Horn. The course was taken toward the northwest, and the next day the screw of the frigate was at last beating the waters of the Pacific.

"Keep your eyes open!" called out the sailors.

And they were opened widely. Both eyes and glasses, a little dazzled, it is true, by the prospect of two thousand dollars, had not an instant's repose. Day and night they watched the surface of the ocean, and even nyctalopes, whose faculty of seeing in the darkness multiplies their chances a hundredfold, would

have had enough to do to gain the prize.

I, myself, for whom money had no charms, was not the least attentive on board. Giving but few minutes to my meals, but a few hours to sleep, indifferent to either rain or sunshine, I did not leave the poop of the vessel. Now leaning on the netting of the forecastle, now on the aff-rad,[u] I devoured with eagerness the soft foam which whitened the sea as far as the eye could reach; and how often have I shared the emotion of the majority of the crew when some capricious whale raised its black back above the waves! The poop of the vessel was crowded in a moment. The cabins poured forth a torrent of sailors and officers, each with heaving breast and troubled eye watching the course of the cetacean. I looked, and looked, till I was nearly blind, while Conseil, always phlegmatic, kept repeating in a calm voice:

"If, sir, you would not squint so much, you would see better!"

But vain excitement! The *Abraham Lincoln* checked its speed and made for the animal signaled, a simple whale, or common cachalot, which soon disappeared amid a storm of execration.

But the weather was good. The voyage was being accomplished under the most favorable auspices. It was then the bad season in Australia, the July of that zone corresponding to our January in Europe; but the sea was beautiful and easily scanned round a vast circumference.

The 20th of July, the Tropic of Capricorn was cut by 105° of longitude,and the 27th of the same month we crossed the equator on the 110th meridian. This passed, the frigate took a more decided westerly direction, and scoured the central waters of the Pacific. Commander Farragut thought, and with reason, that it was better to remain in deep water, and keep clear of continents or islands, which the beast itself seemed to shun (perhaps because there was not enough water for him! suggested the greater part of the crew). The frigate passed at some distance from the Marquesas and the Sandwich Islands, crossed the Tropic of Cancer, and made for the China Seas. We were on the theater of the last diversions of the monster; and to say truth, we no longer *lived* on board. Hearts palpitated, fearfully preparing themselves for future incurable aneurism. The entire ship's crew were undergoing a nervous excitement, of which I can give no idea; they could not eat, they could not sleep: twenty times a day, a misconception or an optical illusion of some sailor seated on the taffrail would cause dreadful perspirations, and these emotions, twenty times repeated, kept us in a state of excitement so violent that a reaction was unavoidable.

And truly, reaction soon showed itself. For three months, during which a day seemed an age, the *Abraham Lincoln* furrowed all the waters of the Northern Pacific, running at whales, making sharp deviations from her course, veering suddenly from one tack to another, stopping suddenly, putting on steam, and backing ever and anon at the risk of deranging her machinery; and not one point of the Japanese or American coast was left unexplored.

The warmest partisans of the enterprise now became its most ardent detractors. Reaction mounted from the crew to the captain himself, and certainly, had it not been for resolute determination on the part of Captain Farragut, the frigate would have headed due southward. This useless search could not last much longer. The *Abraham Lincoln* had nothing to reproach herself with, she had done her best to succeed. Never had an American ship's crew shown more zeal or patience; its failure could not be placed to their charge—there remained nothing but to return.

This was represented to the commander. The sailors could not hide their discontent, and the service suffered. I will not say there was a mutiny on board, but after a reasonable period of obstinacy, Captain Farragut (as Columbus did) asked for three days' patience. If in three days the monster did not appear, the man at the helm should give three turns of the wheel, and the *Abraham Lincoln* would make for the European seas.

This promise was made on the 2d of November. It had the effect of rallying the ship's crew. The ocean was watched with renewed attention. Each one wished for a last glance in which to sum up his remembrance. Glasses were used with feverish activity. It was a grand defiance given to the giant narwhal, and he could scarcely fail to answer the summons and "appear"

Two days passed, the steam was at half-pressure; a thousand schemes were tried to attract the attention and stimulate the apathy of the animal in case it should be met in those parts. Large quantities of bacon were trailed in the wake of the ship, to the great satisfaction (I must say) of the sharks. Small craft radiated in all directions round the *Abraham Lincoln* as she lay to, and did not leave a spot of the sea unexplored. But the night of the 4th of November arrived without the unveiling of this submarine mystery.

The next day, the 5th of November, at twelve, the delay would (morally speaking) expire; after that time, Commander Farragut, faithful to his promise, was to turn the course to the southeast and abandon forever the northern regions of the Pacific.

The frigate was then in 31° 15' north latitude and 136° 42' east longitude. The coast of Japan still remained less than two hundred miles to leeward. Night was approaching. They had just struck eight bells; large clouds veiled the face of the moon, then in its first quarter. The sea undulated peaceably under the stern of the vessel.

At that moment I was leaning forward on the starboard netting. Conseil, standing near me, was looking straight before him. The crew, perched in the ratlines, examined the horizon, which contracted and darkened by degrees. Officers with their night-glasses scoured the growing darkness; sometimes the ocean sparkled under the rays of the moon, which darted between two clouds, then all trace of light was lost in the darkness.

In looking at Conseil, I could see he was undergoing a little of the general influence. At least I thought so. Perhaps for the first time his nerves vibrated

to a sentiment of curiosity.

“Come, Conseil,” said I, “this is the last chance of pocketing the two thousand dollars.”

“May I be permitted to say, sir,” replied Conseil, “that I never reckoned on getting the prize; and, had the government of the Union offered a hundred thousand dollars, it would have been none the poorer.”

“You are right, Conseil. It is a foolish affair after all, and one upon which we entered too lightly. What time lost, what useless emotions! We should have been back in France six months ago.”

“In your little room, sir,” replied Conseil, “and in your museum, sir, and I should have already classed all your fossils, sir. And the Babiroussa would have been installed in its cage in the Jardin des Plantes, and have drawn all the curious people of the capital!”

“As you say, Conseil. I fancy we shall run a fair chance of being laughed at for our pains.”

“That’s tolerably certain,” replied Conseil quietly; “I think they will make fun of you, sir. And—must I say it?”

“Go on, my good friend.”

“Well, sir, you will only get your deserts.”

“Indeed!”

“When one has the honor of being a savant as you are, sir, one should not expose one’s self to——”

Conseil had not time to finish his compliment. In the midst of general silence a voice had just been heard. It was the voice of Ned Land shouting:

“Look out there! The very thing we are looking for—on our weather beam!”

Chapter VI

At Full Steam

AT THIS CRY THE whole ship's crew hurried toward the harpooner—commander, officers, masters, sailors, cabin boys, even the engineers left their engines, and the stokers their furnaces.

The order to stop her had been given, and the frigate now simply went on by her own momentum. The darkness was then profound; and however good the Canadian's eyes were, I asked myself how he had managed to see, and what he had been able to see. My heart beat as if it would break. But Ned Land was not mistaken, and we all perceived the object he pointed to. At two cables' length from the *Abraham Lincoln,* on the starboard quarter, the sea seemed to be illuminated all over. It was not a mere phosphoric phenomenon. The monster emerged some fathoms[v] from the water, and then threw out that very intense but inexplicable light mentioned in the report of several captains. This magnificent irradiation must have been produced by an agent of great *shining* power. The luminous part traced on the sea an immense oval, much elongated, the center of which condensed a burning heat, whose overpowering brilliancy died out by successive gradations.

"It is only an agglomeration of phosphoric particles," cried one of the officers.

"No, sir, certainly not," I replied. "Never did pholades or salpæ produce such a powerful light. That brightness is of an essentially electrical nature. Besides, see, see! It moves; it is moving forward, backward, it is darting toward us!"

A general cry arose from the frigate.

"Silence!" said the captain. "Up with the helm, reverse the engines."

The steam was shut off, and the *Abraham Lincoln,* beating to port, described a semicircle.

"Right the helm, go ahead," cried the captain.

These orders were executed, and the frigate moved rapidly from the burning light.

I was mistaken. She tried to sheer off, but the supernatural animal approached with a velocity double her own.

We gasped for breath. Stupefaction more than fear made us dumb and motionless. The animal gained on us, sporting with the waves. It made the round of the frigate, which was then making fourteen knots, and enveloped it with its electric rings like luminous dust. Then it moved away two or three miles, leaving a phosphorescent track, like those volumes of steam that the express trains leave behind. All at once from the dark line of the horizon whither it retiredto gain its momentum, the monster rushed suddenly toward the *Abraham Lincoln* with alarming rapidity, stopped suddenly about twenty feet from the hull, and died out—not diving under the water, for its brilliancy did not abate—but suddenly, and as if the source of this brilliant emanation was exhausted. Then it reappeared on the other side of the vessel, as if it had turned and slid under the hull. Any moment a collision might have occurred which would have been fatal to us. However, I was astonished at the maneuvers of the frigate. She fled and did not attack.

On the captain's face, generally so impassive, was an expression of unaccountable astonishment.

"Mr. Aronnax," he said, "I do not know with what formidable being I have to deal, and I will not imprudently risk my frigate in the midst of this darkness. Besides, how attack this unknown thing, how defend one's self from it? Wait for daylight, and the scene will change."

"You have no further doubt, captain, of the nature of the animal?"

"No, sir; it is evidently a gigantic narwhal, and an electric one."

"Perhaps," added I, "one can only approach it with a gymnotus[w] or a torpedo."

"Undoubtedly," replied the captain, "if it possesses such dreadful power, it is the most terrible animal that ever was created. That is why, sir, I must be on my guard."

The crew were on their feet all night. No one thought of sleep. The *Abraham Lincoln,* not being able to struggle with such velocity, had moderated its pace, and sailed at half speed. For its part, the narwhal, imitating the frigate, let the waves rock it at will, and seemed decided not to leave the scene of the struggle. Toward midnight, however, it disappeared, or, to use a more appropriate term, it "died out" like a large glow-worm. Had it fled? One could only fear, not hope it. But at seven minutes to one o'clock in the morning a deafening whistling was heard, like that produced by a body of water rushing with great violence.

The captain, Ned Land, and I were then on the poop, eagerly peering through the profound darkness.

"Ned Land," asked the commander, "you have often heard the roaring of whales?"

"Often, sir; but never such whales the sight of which brought me in two

thousand dollars. If I can only approach within four harpoon lengths of it!"

"But to approach it," said the commander, "I ought to put a whaler at your disposal?"

"Certainly, sir."

"That will be trifling with the lives of my men."

"And mine too," simply said the harpooner.

Toward two o'clock in the morning, the burning light reappeared, not less intense, about five miles to windward of the *Abraham Lincoln.* Notwithstanding the distance, and the noise of the wind and sea, one heard distinctly the loud strokes of the animal's tail, and even its panting breath. It seemed that, at the moment that the enormous narwhal had come to take breath at the surface of the water, the air was ingulfed in its lungs, like the steam in the vast cylinders of a machine of two thousand horsepower.

"Hum!" thought I. "A whale with the strength of a cavalry regiment would be a pretty whale!"

We were on the *qui vive*[x] till daylight, and prepared for the combat. The fishing implements were laid along the hammock nettings. The second lieutenant loaded the blunderbusses, which could throw harpoons to the distance of a mile, and long duck-guns, with explosive bullets, which inflicted mortal wounds even to the most terrible animals. Ned Land contented himself with sharpening his harpoon—a terrible weapon in his hands.

At six o'clock, day began to break; and with the first glimmer of light, the electric light of the narwhal disappeared. At seven o'clock the day was sufficiently advanced, but a very thick sea-fog obscured our view, and the best spy-glasses could not pierce it. That caused disappointment and anger.

I climbed the mizzen-mast. Some officers were already perched on the mast-heads. At eight o'clock the fog lay heavily on the waves, and its thick scrolls rose little by little. The horizon grew wider and clearer at the same time. Suddenly, just as on the day before, Ned Land's voice was heard:

"The thing itself on the port quarter!" cried the harpooner.

Every eye was turned toward the point indicated. There, a mile and a half from the frigate, a long blackish body emerged a yard above the waves. Its tail, violently agitated, produced a considerable eddy. Never did a caudal appendage beat the sea with such violence. An immense track, of a dazzling whiteness, marked the passage of the animal, and described a long curve.

The frigate approached the cetacean. I examined it thoroughly.

The reports of the *Shannon* and of the *Helvetia* had rather exaggerated its size, and I estimated its length at only two hundred and fifty feet. As to its dimensions, I could only conjecture them to be admirably proportioned. While

I watched this phenomenon, two jets of steam and water were ejected from its vents, and rose to the height of 120 feet; thus I ascertained its way of breathing. I concluded definitely that it belonged to the vertebrate branch, class mammalia.

The crew waited impatiently for their chief's orders. The latter, after having observed the animal attentively, called the engineer. The engineer ran to him.

"Sir," said the commander, "you have steam up?"

"Yes, sir," answered the engineer.

"Well, make up your fires and put on all steam."

Three hurrahs greeted this order. The time for the struggle had arrived. Some moments after, the two funnels of the frigate vomited torrents of black smoke, and the bridge quaked under the trembling of the boilers.

The *Abraham Lincoln,* propelled by her powerful screw, went straight at the animal. The latter allowed it to come within half a cable's length; then, as if disdaining to dive, it took a little turn, and stopped a short distance off.

This pursuit lasted nearly three-quarters of an hour, without the frigate gaining two yards on the cetacean. It was quite evident that at that rate we should never come up with it.

"Well, Mr. Land," asked the captain, "do you advise me to put the boats out to sea?"

"No, sir," replied Ned Land; "because we shall not take that beast easily."

"What shall we do then?"

"Put on more steam if you can, sir. With your leave, I mean to post myself under the bowsprit, and if we get within harpooning distance, I shall throw my harpoon."

"Go, Ned," said the captain. "Engineer, put on more pressure."

Ned Land went to his post. The fires were increased, the screw revolved forty-three times a minute, and the steam poured out of the valves. We heaved the log, and calculated that the Abraham Lincoln was going at the rate of 18½ miles an hour.[13]

But the accursed animal swam too at the rate of 18½ miles.

For a whole hour, the frigate kept up this pace, without gaining six feet. It was humiliating for one of the swiftest sailers in the American navy. A stubborn anger seized the crew; the sailors abused the monster, who, as before, disdained to answer them; the captain no longer contented himself with twisting his beard—he gnawed it.

The engineer was again called.

“You have turned full steam on?”

“Yes, Sir,” replied the engineer.

The speed of the *Abraham Lincoln* increased. Its masts trembled down to their stepping-holes, and the clouds of smoke could hardly find way out of the narrow funnels.

They heaved the log a second time.

“Well?” asked the captain of the man at the wheel.

“Nineteen miles and three-tenths, sir.”

“Clap on more steam.”

The engineer obeyed. The manometer showed ten degrees. But the cetacean grew warm itself, no doubt; for, without straining itself, it made 19 3/10 miles.

What a pursuit! No, I cannot describe the emotion that vibrated through me. Ned Land kept his post, harpoon in hand. Several times the animal let us gain upon it. “We shall catch it! We shall catch it!” cried the Canadian. But just as he was going to strike the cetacean stole away with a rapidity that could not be estimated at less than thirty miles an hour, and even during our maximum of speed it bullied the frigate, going round and round it. A cry of fury broke from everyone.

At noon we were no further advanced than at eight o’clock in the morning.

The captain then decided to take more direct means.

“Ah!” said he. “That animal goes quicker than the *Abraham Lincoln*; Very well! We will see whether it will escape these conical bullets. Send your men to the forecastle, sir.”

The forecastle gun was immediately loaded and slewed round. But the shot passed some feet above the cetacean, which was half a mile off.

“Another more to the right,” cried the commander, “and five dollars to whoever will hit that infernal beast.”

An old gunner with a gray beard—that I can see now—with steady eye and grave face, went up to the gun and took a long aim. A loud report was heard, with which were mingled the cheers of the crew.

The bullet did its work; it hit the animal, but not fatally, and, sliding off the rounded surface, was lost in two miles’ depth of sea.

The chase began again, and the captain, leaning toward me, said:

“I will pursue that beast till my frigate bursts up.”

“Yes,” answered I; “and you will be quite right to do it.”

I wished the beast would exhaust itself, and not be insensible to fatigue, like a steam-engine! But it was of no use. Hours passed, without its showing any signs of exhaustion.

However, it must be said in praise of the Abraham Lincoln, that she struggled on indefatigably. I cannot reckon the distance she made under three hundred miles during this unlucky day, November the 6th. But night came on, and overshadowed the rough ocean.

Now I thought our expedition was at an end, and that we should never again see the extraordinary animal. I was mistaken. At ten minutes to eleven in the evening, the electric light reappeared three miles to windward of the frigate, as pure, as intense as during the preceding night.

The narwhal seemed motionless; perhaps, tired with its day’s work, it slept, letting itself float with the undulation of the waves. Now was a chance of which the captain resolved to take advantage.

He gave his orders. The *Abraham Lincoln* kept up half-steam, and advanced cautiously so as not to awake its adversary. It is no rare thing to meet in the middle of the ocean whales so sound asleep that they can be successfully attacked, and Ned Land had harpooned more than one during its sleep. The Canadian went to take his place again under the bowsprit.

The frigate approached noiselessly, stopped at two cables’ length from the animal, and following its track. No one breathed; a deep silence reigned on the bridge. We were not a hundred feet from the burning focus, the light of which increased and dazzled our eyes.

At this moment, leaning on the forecastle bulwark, I saw below me Ned Land grappling the martingale in one hand, brandishing his terrible harpoon in the other, scarcely twenty feet from the motionless animal. Suddenly his arm straightened, and the harpoon was thrown; I heard the sonorous stroke of the weapon, which seemed to have struck a hard body. The electric light went out suddenly, and two enormous waterspouts broke over the bridge of the frigate, rushing like a torrent from stem to stern, overthrowing men, and breaking the lashing of the spars. A fearful shock followed, and, thrown over the rail without having time to stop myself, I fell into the sea.

Chapter VII

An Unknown Species of Whale

THIS UNEXPECTED FALL SO stunned me that I have no clear recollection of my sensations at the time. I was at first drawn down to a depth of about twenty feet. I am a good swimmer (though without pretending to rival Byron or Edgar Poe, who were masters of the art),[14] and in that plunge I did not lose my presence of mind. Two vigorous strokes brought me to the surface of the water. My first care was to look for the frigate. Had the crew seen me disappear? Had the *Abraham Lincoln* veered round? Would the captain put out a boat? Might I hope to be saved?

The darkness was intense. I caught a glimpse of a black mass disappearing in the east, its beacon-lights dying out in the distance. It was the frigate! I was lost.

"Help! Help!" I shouted, swimming toward the Abraham Lincoln in desperation.

My clothes encumbered me; they seemed glued to my body, and paralyzed my movements.

I was sinking! I was suffocating!

"Help!"

This was my last cry. My mouth filled with water; I struggled against being drawn down the abyss. Suddenly my clothes were seized by a strong hand, and I felt myself quickly drawn up to the surface of the sea; and I heard, yes, I heard these words pronounced in my ear:

"If master would be so good as to lean on my shoulder, master would swim with much greater ease."

I seized with one hand my faithful Conseil's arm.

"Is it you?" said I. "You?"

"Myself," answered Conseil, "and waiting master's orders."

"That shock threw you as well as me into the sea?"

"No; but being in my master's service, I followed him."

The worthy fellow thought that was but natural.

“And the frigate?” I asked.

“The frigate?” replied Conseil, turning on his back. “I think that master had better not count too much on her.”

“You think so?”

“I say that, at the time I threw myself into the sea, I heard the men at the wheel say, ‘The screw and the rudder are broken.’”

“Broken?”

“Yes, broken by the monster’s teeth. It is the only injury the *Abraham Lincoln* has sustained. But it is a bad lookout for us—she no longer answers her helm.”

“Then we are lost!”

“Perhaps so,” calmly answered Conseil. “However, we have still several hours before us, and one can do a good deal in some hours.”

Conseil’s imperturbable coolness set me up again. I swam more vigorously; but, cramped by my clothes, which stuck to me like a leaden weight, I felt great difficulty in bearing up. Conseil saw this.

“Will master let me make a slit?” said he; and slipping an open knife under my clothes, he ripped them up from top to bottom very rapidly. Then he cleverly slipped them off me, while I swam for both of us.

Then I did the same for Conseil, and we continued to swim near to each other.

Nevertheless, our situation was no less terrible. Perhaps our disappearance had not been noticed; and if it had been, the frigate could not tack, being without its helm. Conseil argued on this supposition, and laid his plans accordingly. This phlegmatic boy was perfectly self-possessed. We then decided that, as our only chance of safety was being picked up by the *Abraham Lincoln*’s boats, we ought to manage so as to wait for them as long as possible. I resolved then to husband our strength, so that both should not be exhausted at the same time; and this is how we managed: while one of us lay on our back, quite still, with arms crossed, and legs stretched out, the other would swim and push the other on in front. This towing business did not last more than ten minutes each; and relieving each other thus, we could swim on for some hours, perhaps till daybreak. Poor chance! But hope is so firmly rooted in the heart of man! Moreover, there were two of us. Indeed, I declare (though it may seem improbable) if I sought to destroy all hope, if I wished to despair, I could not.

The collision of the frigate with the cetacean had occurred about eleven o'clock the evening before. I reckoned then we should have eight hours to swim before sunrise—an operation quite practicable if we relieved each other. The sea, very calm, was in our favor. Sometimes I tried to pierce the intense darkness that was only dispelled by the phosphorescence caused by our movements. I watched the luminous waves that broke over my hand, whose mirror-like surface was spotted with silvery rings. One might have said that we were in a bath of quicksilver.

Near one o'clock in the morning, I was seized with dreadful fatigue. My limbs stiffened under the strain of violent cramp. Conseil was obliged to keep me up, and our preservation devolved on him alone. I heard the poor boy pant; his breathing became short and hurried. I found that he could not keep up much longer.

"Leave me! Leave me!" I said to him.

"Leave my master? Never!" replied he. "I would drown first."

Just then the moon appeared through the fringes of a thick cloud that the wind was driving to the east. The surface of the sea glittered with its rays. This kindly light reanimated us. My head got better again. I looked at all the points of the horizon. I saw the frigate! She was five miles from us, and looked like a dark mass, hardly discernible. But no boats!

I would have cried out. But what good would it have been at such a distance? My swollen lips could utter no sounds. Conseil could articulate some words, and I heard him repeat at intervals, "Help! Help!"

Our movements were suspended for an instant; we listened. It might be only a singing in the ear, but it seemed to me as if a cry answered the cry from Conseil.

"Did you hear?" I murmured.

"Yes! Yes!"

And Conseil gave one more despairing call.

This time there was no mistake! A human voice responded to ours! Was it the voice of another unfortunate creature, abandoned in the middle of the ocean, some other victim of the shock sustained by the vessel? Or rather was it a boat from the frigate, that was hailing us in the darkness?

Conseil made a last effort, and leaning on my shoulder, while I struck out in a despairing effort, he raised himself half out of the water, then fell back exhausted.

"What did you see?"

"I saw," murmured he—"I saw—but do not talk—reserve all your strength!"

What had he seen? Then, I know not why, the thought of the monster came into my head for the first time! But that voice? The time is past for Jonahs to take refuge in whales' bellies![y] However, Conseil was towing me again. He raised his head sometimes, looked before us, and uttered a cry of recognition, which was responded to by a voice that came nearer and nearer. I scarcely heard it. My strength was exhausted; my fingers stiffened; my hand afforded me support no longer; my mouth, convulsively opening, filled with salt water. Cold crept over me. I raised my head for the last time, then I sank.

At this moment a hard body struck me. I clung to it, then I felt that I was being drawn up, that I was brought to the surface of the water, that my chest collapsed: I fainted.

It is certain that I soon came to, thanks to the vigorous rubbings that I received. I half opened my eyes.

"Conseil!" I murmured.

"Does master call me?" asked Conseil.

Just then, by the waning light of the moon, which was sinking down to the horizon, I saw a face which was not Conseil's, and which I immediately recognized.

"Ned!" I cried.

"The same, sir, who is seeking his prize!" replied the Canadian.

"Were you thrown into the sea by the shock of the frigate?"

"Yes, professor; but, more fortunate than you, I was able to find a footing almost directly upon a floating island."

"An island?"

"Or, more correctly speaking, on our gigantic narwhal."

"Explain yourself, Ned!"

"Only I soon found out why my harpoon had not entered its skin and was blunted."

"Why, Ned, why?"

"Because, professor, that beast is made of sheet-iron."

The Canadian's last words produced a sudden revolution in my brain. I wriggled myself quickly to the top of the being, or object, half out of the water, which served us for a refuge. I kicked it. It was evidently a hard, impenetrable body, and not the soft substance that forms the bodies of the great marine mammalia. But this hard body might be a bony carapace, like that of the antediluvian animals; and I should be free to class this monster among amphibious reptiles, such as tortoises or alligators.

Well, no! The blackish back that supported me was smooth, polished, without scales. The blow produced a metallic sound; and incredible though it may be, it seemed, I might say, as if it was made of riveted plates.

There was no doubt about it! This monster, this natural phenomenon that had puzzled the learned world, and overthrown and misled the imagination of seamen of both hemispheres, was, it must be owned, a still more astonishing phenomenon, inasmuch as it was simply a human construction.

We had no time to lose, however. We were lying upon the back of a sort of submarine boat, which appeared (as far as I could judge) like a huge fish of steel. Ned Land's mind was made up on this point. Conseil and I could only agree with him.

Just then a bubbling began at the back of this strange thing (which was evidently propelled by a screw), and it began to move. We had only just time to seize hold of the upper part, which rose about seven feet out of the water, and happily its speed was not great.

"As long as it sails horizontally," muttered Ned Land, "I do not mind; but if it takes a fancy to dive, I would not give two straws for my life."

The Canadian might have said still less. It became really necessary to communicate with the beings, whatever they were, shut up inside the machine. I searched all over the outside for an aperture, a panel, or a manhole, to use a technical expression; but the lines of the iron rivets, solidly driven into the joints of the iron plates, were clear and uniform. Besides, the moon disappeared then, and left us in total darkness.

At last this long night passed. My indistinct remembrance prevents my describing all the impressions it made. I can only recall one circumstance. During some lulls of the wind and sea, I fancied I heard several times vague sounds, a sort of fugitive harmony produced by distant words of command. What was then the mystery of this submarine craft of which the whole world vainly sought an explanation? What kind of beings existed in this strange boat? What mechanical agent caused its prodigious speed?

Daybreak appeared. The morning mists surrounded us, but they soon cleared off. I was about to examine the hull, which formed on deck a kind of horizontal platform, when I felt it gradually sinking.

"Oh, confound it!" cried Ned Land, kicking the resounding plate. "Open, you inhospitable rascals!"

Happily the sinking movement ceased. Suddenly a noise, like iron works violently pushed aside, came from the interior of the boat. One iron plate was moved, a man appeared, uttered an odd cry, and disappeared immediately.

Some moments after, eight strong men with masked faces appeared noiselessly and drew us down into their formidable machine.

Chapter VIII

Mobilis in Mobili

THIS FORCIBLE ABDUCTION, so roughly carried out, was accomplished with the rapidity of lightning. I shivered all over. Whom had we to deal with? No doubt some new sort of pirates, who explored the sea in their own way.

Hardly had the narrow panel closed upon me, when I was enveloped in darkness. My eyes, dazzled with the outer light, could distinguish nothing. I felt my naked feet cling to the rungs of an iron ladder. Ned Land and Conseil, firmly seized, followed me. At the bottom of the ladder, a door opened, and shut after us immediately with a bang.

We were alone. Where, I could not say, hardly imagine. All was black, and such a dense black that, after some minutes, my eyes had not been able to discern even the faintest glimmer.

Meanwhile, Ned Land, furious at these proceedings, gave free vent to his indignation.

"Confound it!" cried he. "Here are people who come up to the Scotch[z] for hospitality. They only just miss being cannibals. I should not be surprised at it, but I declare that they shall not eat me without my protesting."

"Calm yourself, friend Ned, calm yourself," replied Conseil quietly. "Do not cry out before you are hurt. We are not quite done for yet. "

"Not quite," sharply replied the Canadian, "but pretty near, at all events. Things look black. Happily my bowie-knife I have still, and I can always see well enough to use it. The first of these pirates who lays a hand on me——"

"Do not excite yourself, Ned," I said to the harpooner, "and do not compromise us by useless violence. Who knows that they will not listen to us? Let us rather try to find out where we are."

I groped about. In five steps I came to an iron wall, made of plates bolted together. Then turning back I struck against a wooden table, near which were ranged several stools. The boards of this prison were concealed under a thick mat of phormium, which deadened the noise of the feet. The bare walls revealed no trace of window or door. Conseil, going round the reverse way, met me, and we went back to the middle of the cabin, which measured about twenty feet by ten. As to its height, Ned Land, in spite of his own great height,

could not measure it.

Half an hour had already passed without our situation being bettered, when the dense darkness suddenly gave way to extreme light. Our prison was suddenly lighted—that is to say, it became filled with a luminous matter, so strong that I could not bear it at first. In its whiteness and intensity I recognized the electric light which played round the submarine boat like a magnificent phenomenon of phosphorescence. After shutting my eyes involuntarily, I opened them and saw that this luminous agent came from a half-globe, unpolished, placed in the roof of the cabin.

"At last one can see," cried Ned Land, who, knife in hand, stood on the defensive.

"Yes," said I, "but we are still in the dark about ourselves."

"Let master have patience," said the imperturbable Conseil.

The sudden lighting of the cabin enabled me to examine it minutely. It only contained a table and five stools. The invisible door might be hermetically sealed. No noise was heard. All seemed dead in the interior of this boat. Did it move, did it float on the surface of the ocean, or did it dive into its depths? I could not guess.

A noise of bolts was now heard, the door opened and two men appeared.

One was short, very muscular, broad-shouldered, with robust limbs, strong head, an abundance of black hair, thick mustache, a quick, penetrating look, and the vivacity which characterizes the population of Southern France.

The second stranger merits a more detailed description. A disciple of Gratiolet or Engel would have read his face like an open book.[aa] I made out his prevailing qualities directly: self-confidence—because his head was well set on his shoulders, and his black eyes looked around with cold assurance; calmness—for his skin, rather pale, showed his coolness of blood; energy—evinced by the rapid contraction of his lofty brows; and courage—because his deep breathing denoted great power of lungs.

Whether this person was thirty-five or fifty years of age, I could not say. He was tall, had a large forehead, straight nose, a clearly cut mouth, beautiful teeth, with fine tapered hands, indicative of a highly nervous temperament. This man was certainly the most admirable specimen I had ever met. One particular feature was his eyes, rather far from each other, and which could take in nearly a quarter of the horizon at once.

This faculty—I verified it later—gave him a range of vision far superior to Ned Land's. When this stranger fixed upon an object, his eyebrows met, his large eyelids closed around so as to contract the range of his vision, and he looked as if he magnified the objects lessened by distance, as if he pierced those sheets of water so opaque to our eyes, and as if he read the very depths of the seas.

The two strangers, with caps made from the fur of the sea otter and shod with sea boots of seals' skin, were dressed in clothes of a particular texture, which allowed free movement of the limbs. The taller of the two, evidently the chief on board, examined us with great attention, without saying a word; then turning to his companion, talked with him in an unknown tongue. It was a sonorous, harmonious, and flexible dialect, the vowels seeming to admit of very varied accentuation.

The other replied by a shake of the head, and added two or three perfectly incomprehensible words. Then he seemed to question me by a look.

I replied in good French that I did not know his language; but he seemed not to understand me, and my situation became more embarrassing.

"If master were to tell our story," said Conseil, "perhaps these gentlemen may understand some words."

I began to tell our adventures, articulating each syllable clearly, and without omitting one single detail. I announced our names and rank, introducing in person Professor Aronnax, his servant Conseil, and Master Ned Land, the harpooner.

The man with the soft calm eyes listened to me quietly, even politely, and with extreme attention; but nothing in his countenance indicated that he had understood my story. When I finished he said not a word.

There remained one resource, to speak English. Perhaps they would know this almost universal language. I knew it, as well as the German language—well enough to read it fluently, but not to speak it correctly. But anyhow, we must make ourselves understood.

"Go on in your turn," I said to the harpooner; "speak your best Anglo-Saxon, and try to do better than I."

Ned did not beg off, and recommenced our story.

To his great disgust, the harpooner did not seem to have made himself more intelligible than I had. Our visitors did not stir. They evidently understood neither the language of Arago nor of Faraday. [15]

Very much embarrassed, after having vainly exhausted our philological resources, I knew not what part to take, when Conseil said:

"If master will permit me, I will relate it in German."

But in spite of the elegant turns and good accent of the narrator, the German language had no success. At last, nonplussed, I tried to remember my first lessons, and to narrate our adventures in Latin, but with no better success. This last attempt being of no avail, the two strangers exchanged some words in their unknown language and retired.

The door shut.

“It is an infamous shame,” cried Ned Land, who broke out for the twentieth time; “we speak to those rogues in French, English, German, and Latin, and not one of them has the politeness to answer!”

“Calm yourself,” I said to the impetuous Ned, “anger will do no good.”

“But do you see, professor,” replied our irascible companion, “that we shall absolutely die of hunger in this iron cage?”

“Bah,” said Conseil philosophically; “we can hold out some time yet.”

“My friends,” I said, “we must not despair. We have been worse off than this. Do me the favor to wait a little before forming an opinion upon the commander and crew of this boat.”

“My opinion is formed,” replied Ned Land sharply. “They are rascals.”

“Good! And from what country?”

“From the land of rogues!”

“My brave Ned, that country is not clearly indicated on the map of the world; but I admit that the nationality of the two strangers is hard to determine. Neither English, French, nor German, that is quite certain. However, I am inclined to think that the commander and his companion were born in low latitudes. There is southern blood in them. But I cannot decide by their appearance whether they are Spaniards, Turks, Arabians, or Indians. As to their language, it is quite incomprehensible.”

“There is the disadvantage of not knowing all languages,” said Conseil, “or the disadvantage of not having one universal language.” ab

As he said these words, the door opened. A steward entered. He brought us clothes, coats and trousers, made of a stuff I did not know. I hastened to dress myself, and my companions followed my example. During that time, the steward—dumb, perhaps deaf—had arranged the table, and laid three plates.

“This is something like,” said Conseil.

“Bah,” said the rancorous harpooner, “what do you suppose they eat here? Tortoise liver, filleted shark, and beefsteaks from sea dogs.”

“We shall see,” said Conseil.

The dishes, of bell metal, were placed on the table, and we took our places. Undoubtedly we had to do with civilized people, and had it not been for the electric light which flooded us, I could have fancied I was in the dining-room of the Adelphi Hotel at Liverpool, or at the Grand Hotel in Paris. I must say, however, that there was neither bread nor wine. The water was fresh and clear, but it was water, and did not suit Ned Land’s taste. Among the dishes which were brought to us, I recognized several fish delicately dressed; but of some, although excellent, I could give no opinion, neither could I tell to what kingdom they belonged, whether animal or vegetable. As to the dinner

service, it was elegant, and in perfect taste. Each utensil, spoon, fork, knife, plate, had a letter engraved on it, with a motto above it, of which this is an exact facsimile:

MOBILIS IN MOBILI[ac]

N.

The letter N was no doubt the initial of the name of the enigmatical person who commanded at the bottom of the seas.

Ned and Conseil did not reflect much. They devoured the food, and I did likewise. I was, besides, reassured as to our fate; and it seemed evident that our hosts would not let us die of want.

However, everything has an end, everything passes away, even the hunger of people who have not eaten for fifteen hours. Our appetites satisfied, we felt overcome with sleep.

“Faith! I shall sleep well,” said Conseil.

“So shall I;” replied Ned Land.

My two companions stretched themselves on the cabin carpet, and were soon sound asleep. For my own part, too many thoughts crowded my brain, too many insoluble questions pressed upon me, too many fancies kept my eyes half open. Where were we? What strange power carried us on? I felt—or rather fancied I felt—the machine sinking down to the lowest beds of the sea. Dreadful night-mares beset me; I saw in these mysterious asylums a world of unknown animals, among which this submarine boat seemed to be of the same kind, living, moving, and formidable as they. Then my brain grew calmer, my imagination wandered into vague unconsciousness, and I soon fell into a deep sleep.

Chapter IX

Ned Land's Tempers

How LONG WE SLEPT I do not know; but our sleep must have lasted long, for it rested us completely from our fatigues. I woke first. My companions had not moved, and were still stretched in their corner.

Hardly roused from my somewhat hard couch, I felt my brain freed, my mind clear. I then began an attentive examination of our cell. Nothing was changed inside. The prison was still a prison; the prisoners, prisoners. However, the steward, during our sleep, had cleared the table. I breathed with difficulty. The heavy air seemed to oppress my lungs. Although the cell was large, we had evidently consumed a great part of the oxygen that it contained. Indeed, each man consumes, in one hour, the oxygen contained in more than 176 pints of air, and this air, charged (as then) with a nearly equal quantity of carbonic acid, becomes unbreathable.

It became necessary to renew the atmosphere of our prison, and no doubt the whole in the submarine boat. That gave rise to a question in my mind. How would the commander of this floating dwelling-place proceed? Would he obtain air by chemical means, in getting by heat the oxygen contained in chlorate of potash, and in absorbing carbonic acid by caustic potash?[ad] Or, a more convenient, economical, and consequently more probable alternative, would he be satisfied to rise and take breath at the surface of the water, like a cetacean, and so renew for twenty-four hours the atmospheric provision?

In fact, I was already obliged to increase my respirations to eke out of this cell the little oxygen it contained, when suddenly I was refreshed by a current of pure air, and perfumed with saline emanations. It was an invigorating seabreeze, charged with iodine. I opened my mouth wide, and my lungs saturated themselves with fresh particles.

At the same time I felt the boat rolling. The iron-plated monster had evidently just risen to the surface of the ocean to breathe, after the fashion of whales. I found out from that the mode of ventilating the boat.

When I had inhaled this air freely, I sought the conduit-pipe which conveyed to us the beneficial whiff, and I was not long in finding it. Above the door was a ventilator, through which volumes of fresh air renewed the impoverished atmosphere of the cell.

I was making my observations, when Ned and Conseil awoke almost at the

same time, under the influence of this reviving air. They rubbed their eyes, stretched themselves, and were on their feet in an instant.

“Did master sleep well?” asked Conseil, with his usual politeness.

“Very well, my brave boy. And you, Mr. Land?”

“Soundly, professor. But I don’t know if I am right or not; there seems to be a sea-breeze!”

A seaman could not be mistaken, and I told the Canadian all that had passed during his sleep.

“Good!” said he. “That accounts for those roarings we heard when the supposed narwhal sighted the Abraham *Lincoln.”*

“Quite so, Master Land; it was taking breath.”

“Only, Mr. Aronnax, I have no idea what o’clock it is, unless it is dinner-time.”

“Dinner-time! My good fellow? Say rather breakfast-time, for we certainly have begun another day.”

“So,” said Conseil, “we have slept twenty-four hours?”

“That is my opinion.”

“I will not contradict you,” replied Ned Land. “But dinner or breakfast, the steward will be welcome, whichever he brings.”

“Master Land, we must conform to the rules on board, and I suppose our appetites are in advance of the dinner-hour.”

“That is just like you, friend Conseil,” said Ned impatiently. “You are never out of temper, always calm; you would return thanks before grace, and die of hunger rather than complain!”

Time was getting on, and we were fearfully hungry; and this time the steward did not appear. It was rather too long to leave us, if they really had good intentions toward us. Ned Land, tormented by the cravings of hunger, got still more angry; and notwithstanding his promise, I dreaded an explosion when he found himself with one of the crew.

For two hours more, New Land’s temper increased; he cried, he shouted, but in vain. The walls were deaf. There was no sound to be heard in the boat; all was still as death. It did not move, for I should have felt the trembling motion of the hull under the influence of the screw. Plunged in the depths of the waters, it belonged no longer to earth—this silence was dreadful.

I felt terrified, Conseil was calm, Ned Land roared.

Just then a noise was heard outside. Steps sounded on the metal flags. The locks were turned, the door opened, and the steward appeared.

Before I could rush forward to stop him, the Canadian had thrown him down, and held him by the throat. The steward was choking under the grip of his powerful hand.

Conseil was already trying to unclasp the harpooner's hand from his half-suffocated victim, and I was going to fly to the rescue, when suddenly I was nailed to the spot by hearing these words in French:

"Be quiet, Master Land; and you, professor, will you be so good as to listen to me?"

Chapter X

The Man of the Seas

IT WAS THE COMMANDER of the vessel who thus spoke.

At these words, Ned Land rose suddenly. The steward, nearly strangled, tottered out on a sign from his master; but such was the power of the commander on board, that not a gesture betrayed the resentment which this man must have felt toward the Canadian. Conseil interested in spite of himself, I stupefied, awaited in silence the result of this scene.

The commander, leaning against a corner of the table with his arms folded, scanned us with profound attention. Did he hesitate to speak? Did he regret the words which he had just spoken in French? One might almost think so.

After some moments of silence, which not one of us dreamed of breaking, “Gentlemen,” said he, in a calm and penetrating voice, “I speak French, English, German, and Latin equally well. I could, therefore, have answered you at our first interview, but I wished to know you first, then to reflect. The story told by each one, entirely agreeing in the main points, convinced me of your identity. I know now that chance has brought before me M. Pierre Aronnax, Professor of Natural History at the Museum of Paris, intrusted with a scientific mission abroad; Conseil, his servant; and Ned Land, of Canadian origin, harpooner on board the frigate Abraham Lincoln of the navy of the United States of America.”

I bowed assent. It was not a question that the commander put to me. Therefore there was no answer to be made. This man expressed himself with perfect ease, without any accent. His sentences were well turned, his words clear, and his fluency of speech remarkable. Yet I did not recognize in him a fellow-countryman.

He continued the conversation in these terms:

“You have doubtless thought, sir, that I have delayed long in paying you this second visit. The reason is that, your identity recognized, I wished to weigh maturely what part to act toward you. I have hesitated much. Most annoying circumstances have brought you into the presence of a man who has broken all the ties of humanity. You have come to trouble my existence.”

“Unintentionally!” said I.

“Unintentionally?” replied the stranger, raising his voice a little. “Was it unintentionally that the *Abraham Lincoln* pursued me all over the seas? Was it unintentionally that you took passage in this frigate? Was it unintentionally that your cannon-balls rebounded off the plating of my vessel? Was it unintentionally that Mr. Ned Land struck me with his harpoon?”

I detected a restrained irritation in these words. But to these recriminations I had a very natural answer to make, and I made it.

“Sir,” said I, “no doubt you are ignorant of the discussions which have taken place concerning you in America and Europe. You do not know that divers accidents, caused by collisions with your submarine machine, have excited public feeling in the two continents. I omit the hypotheses without number by which it was sought to explain the inexplicable phenomenon of which you alone possess the secret. But you must understand that, in pursuing you over the high seas of the Pacific, the *Abraham Lincoln* believed itself to be chasing some powerful sea-monster, of which it was necessary to rid the ocean at any price.”

A half-smile curled the lips of the commander: then, in a calmer tone:

“M. Aronnax,” he replied, “dare you affirm that your frigate would not as soon have pursued and cannonaded a submarine boat as a monster?”

This question embarrassed me, for certainly Captain Farragut might not have hesitated. He might have thought it his duty to destroy a contrivance of this kind, as he would a gigantic narwhal.

“You understand then, sir,” continued the stranger, “that I have the right to treat you as enemies?

I answered nothing, purposely. For what good would it be to discuss such a proposition, when force could destroy the best arguments?

“I have hesitated for some time,” continued the commander; “nothing obliged me to show you hospitality. If I chose to separate myself from you, I should have no interest in seeing you again; I could place you upon the deck of this vessel which has served you as a refuge, I could sink beneath the waters, and forget that you had ever existed. Would not that be my right?”

“It might be the right of a savage,” I answered, “but not that of a civilized man.”

“Professor,” replied the commander quickly, “I am not what you call a civilized man! I have done with society entirely, for reasons which I alone have the right of appreciating. I do not therefore obey its laws, and I desire you never to allude to them before me again!”

This was said plainly. A flash of anger and disdain kindled in the eyes of the Unknown, and I had a glimpse of a terrible past in the life of this man. Not only had he put himself beyond the pale of human laws, but he had made himself independent of them, free in the strictest acceptation of the word,

quite beyond their reach! Who then would dare to pursue him at the bottom of the sea, when, on its surface, he defied all attempts made against him? What vessel could resist the shock of his submarine monitor? What cuirass, however thick, could withstand the blows of his spur? No man could demand from him an account of his actions; God, if he believed in one—his conscience, if he had one—were the sole judges to whom he was answerable.

These reflections crossed my mind rapidly, while the stranger personage was silent, absorbed, and as if wrapped up in himself. I regarded him with fear mingled with interest, as, doubtless, CEdipus regarded the Sphinx.[16]

After a rather long silence, the commander resumed the conversation.

"I have hesitated," said he, "but I have thought that my interest might be reconciled with that pity to which every human being has a right. You will remain on board my vessel, since fate has cast you there. You will be free; and in exchange for this liberty, I shall only impose one single condition. Your word of honor to submit to it will suffice."

"Speak, sir," I answered. "I suppose this condition is one which a man of honor may accept?"

"Yes, sir; it is this. It is possible that certain events, unforeseen, may oblige me to consign you to your cabins for some hours or some days, as the case may be. As I desire never to use violence, I expect from you, more than all the others, a passive obedience. In thus acting, I take all the responsibility: I acquit you entirely, for I make it an impossibility for you to see what ought not to be seen. Do you accept this condition?"

Then things took place on board which, to say the least, were singular, and which ought not to be seen by people who were not placed beyond the pale of social laws. Among the surprises which the future was preparing for me, this might not be the least.

"We accept," I answered; "only I will ask your permission, sir, to address one question to you—one only."

"Speak, sir."

"You said that we should be free on board."

"Entirely."

"I ask you, then, what you mean by this liberty?"

"Just the liberty to go, to come, to see, to observe even all that passes here—save under rare circumstances—the liberty, in short, which we enjoy ourselves, my companions and I."

It was evident that we did not understand one another.

"Pardon me, sir," I resumed, "but this liberty is only what every prisoner has of pacing his prison. It cannot suffice us."

“It must suffice you, however.”

“What! We must renounce forever seeing our country, our friends, our relations again?”

“Yes, sir. But to renounce that unendurable worldly yoke which men believe to be liberty is not perhaps so painful as you think.”

“Well,” exclaimed Ned Land, “never will I give my word of honor not to try to escape.”

“I did not ask you for your word of honor, Master Land,” answered the commander coldly.

“Sir,” I replied, beginning to get angry in spite of myself, “you abuse your situation toward us; it is cruelty.”

“No, sir, it is clemency. You are my prisoners of war. I keep you, when I could, by a word, plunge you into the depths of the ocean. You attacked me. You came to surprise a secret which no man in the world must penetrate—the secret of my whole existence. And you think that I am going to send you back to that world which must know me no more? Never! In retaining you, it is not you whom I guard—it is myself.”

These words indicated a resolution taken on the part of the commander, against which no arguments would prevail.

“So, sir,” I rejoined, “you give us simply the choice between life and death?”

“Simply.”

“My friends,” said I, “to a question thus put, there is nothing to answer. But no word of honor binds us to the master of this vessel.”

“None, sir,” answered the Unknown.

Then, in a gentler tone, he continued:

“Now, permit me to finish what I have to say to you. I know you, M. Aronnax. You and your companions will not, perhaps, have so much to complain of in the chance which has bound you to my fate. You will find among the books which are my favorite study the work which you have published on ‘the depths of the sea.’ I have often read it. You have carried your work as far as terrestrial science permitted you. But you do not know all —you have not seen all. Let me tell you then, professor, that you will not regret the time passed on board my vessel. You are going to visit the land of marvels.”

These words of the commander had a great effect upon me. I cannot deny it. My weak point was touched; and I forgot, for a moment, that the contemplation of these sublime subjects was not worth the loss of liberty. Besides, I trusted to the future to decide this grave question. So I contented

myself with saying:

"By what name ought I to address you?"

"Sir," replied the commander, "I am nothing to you but Captain Nemo;[ae] and you and your companions are nothing to me but the passengers of the *Nautilus.*"[17]

Captain Nemo called. A steward appeared. The captain gave him his orders in that strange language which I did not understand. Then, turning toward the Canadian and Conseil:

"A repast awaits you in your cabin," said he. "Be so good as to follow this man. And now, M. Aronnax, our breakfast is ready. Permit me to lead the way."

"I am at your service, captain."

I followed Captain Nemo; and as soon as I had passed through the door, I found myself in a kind of passage lighted by electricity, similar to the waist of a ship. After we had proceeded a dozen yards, a second door opened before me.

I then entered a dining-room, decorated and furnished in severe taste. High oaken sideboards, inlaid with ebony, stood at the two extremities of the room, and upon their shelves glittered china, porcelain, and glass of inestimable value.

The plate on the table sparkled in the rays which the luminous ceiling shed around while the light was tempered and softened by exquisite paintings.

In the center of the room was a table richly laid out. Captain Nemo indicated the place I was to occupy.

The breakfast consisted of a certain number of dishes, the contents of which were furnished by the sea alone; and I was ignorant of the nature and mode of preparation of some of them. I acknowledged that they were good, but they had a peculiar flavor, which I easily became accustomed to. These different aliments appeared to me to be rich in phosphorus, and I thought they must have a marine origin.

Captain Nemo looked at me. I asked him no questions, but he guessed my thoughts, and answered of his own accord the questions which I was burning to address to him.

"The greater part of these dishes are unknown to you," he said to me. "However, you may partake of them without fear. They are wholesome and nourishing. For a long time I have renounced the food of the earth, and I am never ill now. My crew, who are healthy, are fed on the same food."

"So," said I, "all these eatables are the produce of the sea?"

"Yes, professor, the sea supplies all my wants. Sometimes I cast my nets in

tow, and I draw them in ready to break. Sometimes I hunt in the midst of this element, which appears to be inaccessible to man, and quarry the game which dwells in my submarine forests. My flocks, like those of Neptune's old shepherds,[18] graze fearlessly in the immense prairies of the ocean. I have a vast property there, which I cultivate myself, and which is always sown by the hand of the Creator of all things."

"I can understand perfectly, sir, that your nets furnish excellent fish for your table; I can understand also that you hunt aquatic game in your submarine forests; but I cannot understand at all how a particle of meat, no matter how small, can figure in your bill of fare."

"This, which you believe to be meat, professor, is nothing else than fillet of turtle. Here are also some dolphin's livers, which you take to be ragout of pork. My cook is a clever fellow, who excels in dressing these various products of the ocean. Taste all these dishes. Here is a preserve of holothuria,[af] which a Malay would declare to be unrivaled in the world; here is a cream, of which the milk has been furnished by the cetacea, and the sugar by the great fucus of the North Sea; and lastly, permit me to offer you some preserve of anemones, which is equal to that of the most delicious fruits."

I tasted, more from curiosity than as a connoisseur, while Captain Nemo enchanted me with his extraordinary stories.

"You like the sea, captain?"

"Yes, I love it! The sea is everything. It covers seven-tenths of the terrestrial globe. Its breath is pure and healthy. It is an immense desert, where man is never lonely, for he feels life stirring on all sides. The sea is only the embodiment of a supernatural and wonderful existence. It is nothing but love and emotion; it is the 'Living Infinite,' as one of your poets has said. In fact, professor, Nature manifests herself in it by her three kingdoms, mineral, vegetable, and animal. The sea is the vast reservoir of Nature. The globe began with sea, so to speak; and who knows if it will not end with it? In it is supreme tranquillity. The sea does not belong to despots. Upon its surface men can still exercise unjust laws, fight, tear one another to pieces, and be carried away with terrestrial horrors. But at thirty feet below its level, their reign ceases, their influence is quenched, and their power disappears. Ah! sir, live—live in the bosom of the waters! There only is independence! There I recognize no masters! There I am free!"

Captain Nemo suddenly became silent in the midst of this enthusiasm, by which he was quite carried away. For a few moments he paced up and down, much agitated. Then he became more calm, regained his accustomed coldness of expression, and turning toward me:

"Now, professor," said he, "if you wish to go over the Nautilus, I am at your service."

Captain Nemo rose. I followed him. A double door, contrived at the back of the dining-room, opened, and I entered a room equal in dimensions to that

which I had just quitted.

It was a library. High pieces of furniture, of black violet ebony inlaid with brass, supported upon their wide shelves a great number of books uniformly bound. They followed the shape of the room, terminating at the lower part in huge divans, covered with brown leather, which were curved, to afford the greatest comfort. Light movable desks, made to slide in and out at will, allowed one to rest one's book while reading. In the center stood an immense table, covered with pamphlets, among which were some newspapers, already of old date. The electric light flooded everything; it was shed from four unpolished globes half sunk in the volutes of the ceiling. I looked with real admiration at this room, so ingeniously fitted up, and I could scarcely believe my eyes.

"Captain Nemo," said I to my host, who had just thrown himself on one of the divans, "this is a library which would do honor to more than one of the continental palaces, and I am absolutely astounded when I consider that it can follow you to the bottom of the seas."

"Where could one find greater solitude or silence, professor?" replied Captain Nemo. "Did your study in the Museum afford you such perfect quiet?"

"No, sir; and I must confess that it is a very poor one after yours. You must have six or seven thousand volumes here."

"Twelve thousand, M. Aronnax. These are the only ties which bind me to the earth. But I had done with the world on the day when my *Nautilus* plunged for the first time beneath the waters. That day I bought my last volumes, my last pamphlets, my last papers, and from that time I wish to think that men no longer think or write. These books, professor, are at your service besides, and you can make use of them freely."

I thanked Captain Nemo, and went up to the shelves of the library. Works on science, morals, and literature abounded in every language; but I did not see one single work on political economy; that subject appeared to be strictly proscribed. Strange to say, all these books were irregularly arranged, in whatever language they were written; and this medley proved that the captain of the Nautilus must have read indiscriminately the books which he took up by chance.[ag]

"Sir," said I to the captain, "I thank you for having placed this library at my disposal. It contains treasures of science, and I shall profit by them."

"This room is not only a library," said Captain Nemo, "it is also a smoking-room."

"A smoking-room!" I cried. "Then one may smoke on board?"

"Certainly."

"Then, sir, I am forced to believe that you have kept up a communication with Havana."

“Not any,” answered the captain. “Accept this cigar, M. Aronnax; and though it does not come from Havana, you will be pleased with it, if you are a connoisseur.”

I took the cigar which was offered me; its shape recalled the London ones, but it seemed to be made of leaves of gold. I lighted it at a little brazier, which was supported upon an elegant bronze stem, and drew the first whiffs with the delight of a lover of smoking who has not smoked for two days.

“It is excellent,” said I, “but it is not tobacco.”

“No!” answered the captain. “This tobacco comes neither from Havana nor from the East. It is a kind of seaweed, rich in nicotine, with which the sea provides me, but somewhat sparingly.”

At that moment Captain Nemo opened a door which stood opposite to that by which I had entered the library, and I passed into an immense drawing-room splendidly lighted.

It was a vast four-sided room, thirty feet long, eighteen wide, and fifteen high. A luminous ceiling, decorated with light arabesques, shed a soft clear light over all the marvels accumulated in this museum. For it was in fact a museum, in which an intelligent and prodigal hand had gathered all the treasures of nature and art, with the artistic confusion which distinguishes a painter’s studio. Thirty first-rate pictures, uniformly framed, separated by bright drapery, ornamented the walls, which were hung with tapestry of severe design. I saw works of great value, the greater part of which I had admired in the special collections of Europe, and in the exhibitions of paintings. The several schools of the old masters were represented by a Madonna of Raphael, a Virgin of Leonardo da Vinci, a nymph of Correggio, a woman of Titian, an Adoration of Veronese, an Assumption of Murillo, a portrait of Holbein, a monk of Velasquez, a martyr of Ribeira, a fair of Rubens, two Flemish landscapes of Teniers, three little “genre” pictures of Gérard Dow, Metsu, and Paul Potter, two specimens of Géricault and Prudhon, and some sea-pieces of Backhuysen and Vernet. Among the works of modern painters were pictures with the signatures of Delacroix, Ingres, Decamp, Troyon, Meissonier, Daubigny, etc.; and some admirable statues in marble and bronze, after the finest antique models, stood upon pedestals in the corners of this magnificent museum. Amazement, as the captain of the *Nautilus* had predicted, had already begun to take possession of me.

“Professor,” said this strange man, “you must excuse the unceremonious way in which I receive you, and the disorder of this room.”

“Sir,” I answered, “without seeking to know who you are, I recognize in you an artist.”

“An amateur, nothing more, sir. Formerly I loved to collect these beautiful works created by the hand of man. I sought them greedily and ferreted them out indefatigably, and I have been able to bring together some objects of great value. These are my last souvenirs of that world which is dead to me. In my

eyes, your modern artists are already old; they have two or three thousand years of existence; I confound them in my own mind. Masters have no age."

"And these musicians?" said I, pointing out some works of Weber, Rossini, Mozart, Beethoven, Haydn, Meyerbeer, Herold, Wagner, Auber, Gounod, and a number of others scattered over a large model piano organ which occupied one of the panels of the drawing-room.

"These musicians," replied Captain Nemo, "are the contemporaries of Orpheus;[19] for in the memory of the dead all chronological differences are effaced; and I am dead, professor; as much dead as those of your friends who are sleeping six feet under the earth!"

Captain Nemo was silent, and seemed lost in a profound reverie. I contemplated him with deep interest, analyzing in silence the strange expression of his countenance. Leaning on his elbow against an angle of a costly mosaic table, he no longer saw me—he had forgotten my presence.

I did not disturb this reverie, and continued my observation of the curiosities which enriched this drawing-room.

Under elegant glass cases, fixed by copper rivets, were classed and labeled the most precious productions of the sea which had ever been presented to the eye of a naturalist. My delight as a professor may be conceived.

The division containing the zoöphytes presented the most curious specimens of the two groups of polypi and echinodermes. In the first group, the tubipores, were gorgones arranged like a fan, soft sponges of Syria, ises of the Moluccas, pennatules, an admirable virgularia of the Norwegian seas, variegated umbellulariæ, alcyonariae, a whole series of madrepores, which my master Milne-Edwards has so cleverly classified, among which I remarked some wonderful flabellinae, oculinæ of the island of Bourbon, the "Neptune's car" of the Antilles, superb varieties of corals, in short, every species of those curious polypi of which entire islands are formed, which will one day become continents. Of the echinodermes, remarkable for their coating of spines, asteri, sea-stars, pantacrinæ, comatules, astérophons, echini, holothuri, etc., represented individually a complete collection of this group.

A somewhat nervous conchyliologist would certainly have fainted before other more numerous cases, in which were classified the specimens of mollusks. It was a collection of inestimable value, which time fails me to describe minutely. Among these specimens, I will quote from memory only the elegant royal hammer-fish of the Indian Ocean, whose regular white spots stood out brightly on a red and brown ground, an imperial spondyle, bright colored, bristling with spines, a rare specimen in the European museums (I estimated its value at not less than £1,000); a common hammer-fish of the seas of New Holland, which is only procured with difficulty; exotic buccardia of Senegal; fragile white bivalve shells, which a breath might shatter like a soap-bubble; several varieties of the aspirgillum of Java, a kind of calcareous tube, edged with leafy folds, and much debated by amateurs; a whole series of

trochi, some a greenish-yellow, found in the American seas, others a reddish-brown, natives of Australian waters; others from the Gulf of Mexico, remarkable for their imbricated shell; stellari found in the Southern Seas; and last, the rarest of all, the magnificent spur of New Zealand; and every description of delicate and fragile shells to which science has given appropriate names.

Apart, in separate compartments, were spread out chaplets of pearls of the greatest beauty, which reflected the electric light in little sparks of fire; pink pearls, torn from the pinna-marina of the Red Sea; green pearls of the haliotyde iris; yellow, blue, and black pearls, the curious productions of the divers mollusks of every ocean, and certain mussels of the watercourses of the North; lastly, several specimens of inestimable value which had been gathered from the rarest pintadines. Some of these pearls were larger than a pigeon's egg, and were worth as much, and more than that which the traveler Tavernier [ah] sold to the Shah of Persia for three millions, and surpassed the one in the possession of the Imaum of Muscat, which I had believed to be unrivaled in the world.

Therefore, to estimate the value of this collection was simply impossible. Captain Nemo must have expended millions in the acquirement of these various specimens, and I was thinking what source he could have drawn from, to have been able thus to gratify his fancy for collecting, when I was interrupted by these words:

"You are examining my shells, professor? Unquestionably they must be interesting to a naturalist; but for me they have a far greater charm, for I have collected them all with my own hand, and there is not a sea on the face of the globe which has escaped my researches."

"I can understand, captain, the delight of wandering about in the midst of such riches. You are one of those who have collected their treasures themselves. No museum in Europe possesses such a collection of the produce of the ocean. But if I exhaust all my admiration upon it, I shall have none left for the vessel which carries it. I do not wish to pry into your secrets; but I must confess that this Nautilus, with the motive power which is confined in it, the contrivances which enable it to be worked, the powerful agent which propels it, all excite my curiosity to the highest pitch. I see suspended on the walls of this room instruments of whose use I am ignorant."

"You will find these same instruments in my own room, professor, where I shall have much pleasure in explaining their use to you. But first come and inspect the cabin which is set apart for your own use. You must see how you will be accommodated on board the *Nautilus."*

I followed Captain Nemo, who, by one of the doors opening from each panel of the drawing-room, regained the waist. He conducted me toward the bow, and there I found, not a cabin, but an elegant room, with a bed, dressing-table, and several other pieces of furniture.

I could only thank my host.

“Your room adjoins mine,” said he, opening a door, “and mine opens into the drawing-room that we have just quitted.”

I entered the captain’s room; it had a severe, almost a monkish, aspect. A small iron bedstead, a table, some articles for the toilet; the whole lighted by a skylight. No comforts, the strictest necessaries only.

Captain Nemo pointed to a seat.

“Be so good as to sit down,” he said. I seated myself, and he began thus:

Chapter XI

All by Electricity

"SIR," SAID CAPTAIN NEMO, showing me the instruments hanging on the walls of his room, "here are the contrivances required for the navigation of the *Nautilus.* Here, as in the drawing-room, I have them always under my eyes, and they indicate my position and exact direction in the middle of the ocean. Some are known to you, such as the thermometer, which gives the internal temperature of the Nautilus; the barometer, which indicates the weight of the air and foretells the changes of the weather; the hygrometer, which marks the dryness of the atmosphere; the storm-glass, the contents of which, by decomposing, announce the approach of tempests; the compass, which guides my course; the sextant, which shows the latitude by the altitude of the sun; chronometers, by which I calculate the longitude; and glasses for day and night, which I use to examine the points of the horizon when the *Nautilus* rises to the surface of the waves."

"These are the usual nautical instruments," I replied, "and I know the use of them. But these others, no doubt, answer to the particular requirements of the *Nautilus.* This dial with the movable needle is a manometer, is it not?"

"It is actually a manometer. But by communication with the water, whose external pressure it indicates, it gives our depth at the same time."

"And these other instruments, the use of which I cannot guess?"

"Here, professor, I ought to give you some explanations. Will you be kind enough to listen to me?"

He was silent for a few moments, then he said:

"There is a powerful agent, obedient, rapid, easy, which conforms to every use, and reigns supreme on board my vessel. Everything is done by means of it. It lights it, warms it, and is the soul of my mechanical apparatus. This agent is electricity."[20]

"Electricity?" I cried in surprise.

"Yes, sir." "Yes, sir."

"Nevertheless, captain, you possess an extreme rapidity of movement, which does not agree well with the power of electricity. Until now its dynamic force has remained under restraint, and has only been able to produce a small

amount of power.

"Professor," said Captain Nemo, "my electricity is not everybody's. You know what sea-water is composed of. In a thousand grams are found ninety-six and a half per cent of water, and about two and two-thirds percent. of chloride of sodium; then, in a smaller quantity, chlorides of magnesium and of potassium, bromide of magnesium, sulphate of magnesia, sulphate and carbonate of lime. You see, then, that chloride of sodium forms a large part of it. So it is this sodium that I extract from sea-water, and of which I compose my ingredients. I owe all to the ocean; it produces electricity, and electricity gives heat, light, motion, and, in a word, life to the *Nautilus."*

"But not the air you breathe?"

"Oh, I could manufacture the air necessary for my consumption, but it is useless, because I go up to the surface of the water when I please. However, if electricity does not furnish me with air to breathe, it works at least the powerful pumps that are stored in spacious reservoirs, and which enable me to prolong at need, and as long as I will, my stay in the depths of the sea. It gives a uniform and unintermittent light, which the sun does not. Now look at this clock; it is electrical, and goes with a regularity that defies the best chronometers. I have divided it into twenty-four hours, like the Italian clocks, because for me there is neither night nor day, sun nor moon, but only the factitious light that I take with me to the bottom of the sea. Look! just now, it is ten o'clock in the morning."

"Exactly."

"Another application of electricity. This dial hanging in front of us indicates the speed of the *Nautilus.* An electric thread puts it in communication with the screw, and the needle indicates the real speed. Look! now we are spinning along with a uniform speed of fifteen miles an hour."

"It is marvelous! and I see, captain, you were right to make use of this agent that takes the place of wind, water, and steam."

"We have not finished, M. Aronnax," said Captain Nemo, rising; "if you will follow me, we will examine the stern of the *Nautilus."*

Really, I knew already the anterior part of this submarine boat, of which this is the exact division, starting from the ship's head: the dining-room, five yards long, separated from the library by a water-tight partition; the library, five yards long; the large drawing-room, ten yards long, separated from the captain's room by a second water-tight partition; the said room, five yards in length; mine, two and half yards; and lastly, a reservoir of air, seven and a half yards, that extended to the bows. Total length thirty-five yards, or one hundred and five feet. The partitions had doors that were shut hermetically by means of India-rubber instruments, and they insured the safety of the *Nautilus* in case of a leak.

I followed Captain Nemo through the waist, and arrived at the center of

the boat. There was a sort of well that opened between two partitions. An iron ladder, fastened with an iron hook to the partition, led to the upper end. I asked the captain what the ladder was used for.

"It leads to the small boat," he said.

"What! Have you a boat?" I exclaimed, in surprise.

"Of course; an excellent vessel, light and insubmersible, that

serves either as a fishing or as a pleasure boat."

"But then, when you wish to embark, you are obliged to come to the surface of the water?"

"Not at all. This boat is attached to the upper part of the hull of the *Nautilus,* and occupies a cavity made for it. It is decked, quite water-tight, and held together by solid bolts. This ladder leads to a man-hole made in the hull of the *Nautilus,* that corresponds with a similar hole made in the side of the boat. By this double opening I get into the small vessel. They shut the one belonging, to the *Nautilus*, I shut the other by means of screw pressure. I undo the bolts, and the little boat goes up to the surface of the sea with prodigious rapidity. I then open the panel of the bridge, carefully shut till then; I mast it, hoist my sail, take my oars, and I'm off."

"But how do you get back on board?"

"I do not come back, M. Aronnax; the *Nautilus* comes to me."

"By your orders?"

"By my orders. An electric thread connects us. I telegraph to it, and that is enough."

"Really," I said, astonished at these marvels, "nothing can be more simple."

After having passed by the cage of the staircase that led to the platform, I saw a cabin six feet long, in which Conseil and Ned Land, enchanted with their repast, were devouring it with avidity. Then a door opened into a kitchen nine feet long, situated between the large storerooms. There electricity, better than gas itself, did all the cooking. The streams under the furnaces gave out to the sponges of platina a heat which was regularly kept up and distributed. They also heated a distilling apparatus, which, by evaporation, furnished excellent drinkable water. Near this kitchen was a bath-room comfortably furnished, with hot and cold water taps.

Next to the kitchen was the berth-room of the vessel, sixteen feet long. But the door was shut, and I could not see the management of it, which might have given me an idea of the number of men employed on board the *Nautilus.*

At the bottom was a fourth partition, that separated this office from the engine-room. A door opened, and I found myself in the compartment where

Captain Nemo—certainly an engineer of a very high order—had arranged his locomotive machinery. This engine-room, clearly lighted, did not measure less than sixty-five feet in length. It was divided into two parts; the first contained the materials for producing electricity, and the second the machinery that connected it with the screw. I examined it with great interest, in order to understand the machinery of the *Nautilus.*

"You see," said the captain, "I use Bunsen's contrivances, not Ruhmkorff's.[21] Those would not have been powerful enough. Bunsen's are fewer in number, but strong and large, which experience proves to be the best. The electricity produced passes forward, where it works, by electro-magnets of great size, on a system of levers and cog-wheels that transmit the movement to the axle of the screw. This one, the diameter of which is nineteen feet, and the thread twenty-three feet, performs about a hundred and twenty revolutions in a second."

"And you get then?"

"A speed of fifty miles an hour."

"I have seen the *Nautilus* maneuver before the *Abraham Lincoln,* and I have my own ideas as to its speed. But this is not enough. We must see where we go. We must be able to direct it to the right, to the left, above, below. How do you get to the great depths, where you find an increasing resistance, which is rated by hundreds of atmospheres? How do you return to the surface of the ocean? And how do you maintain yourselves in the requisite medium? Am I asking too much?"

"Not at all, professor," replied the captain with some hesitation; "since you may never leave this submarine boat. Come into the saloon; it is our usual study, and there you will learn all you want to know about the *Nautilus."*

Chapter XII

Some Figures

A MOMENT AFTER WE were seated on a divan in the saloon smoking. The captain showed me a sketch that gave the plan, section, and elevation of the *Nautilus.* Then he began his description in these words:

"Here, M. Aronnax, are the several dimensions of the boat you are in. It is an elongated cylinder with conical ends. It is very like a cigar in shape, a shape already adopted in London in several constructions of the same sort. The length of this cylinder, from stem to stern, is exactly 232 feet, and its maximum breadth is twenty-six feet. It is not built quite like your long-voyage steamers, but its lines are sufficiently long, and its curves prolonged enough, to allow the water to slide off easily, and oppose no obstacle to its passage. These two dimensions enable you to obtain by a simple calculation the surface and cubic contents of the *Nautilus.* Its area measures 6,032 feet; and its contents about 1,500 cubic yards; that is to say, when completely immersed it displaces 50,000 feet of water, or weighs 1,500 tons.

"When I made the plans for this submarine vessel, I meant that nine-tenths should be submerged; consequently, it ought only to displace nine-tenths of its bulk, that is to say, only to weigh that number of tons. I ought not, therefore, to have exceeded that weight, constructing it on the aforesaid dimensions.

"The *Nautilus* is composed of two hulls, one inside, the other outside, joined by T-shaped irons, which render it very strong. Indeed, owing to this cellular arrangement it resists like a block, as if it were solid. Its sides cannot yield; it coheres spontaneously, and not by the closeness of its rivets; and the homogeneity of its construction, due to the perfect union of the materials, enables it to defy the roughest seas.

"These two hulls are composed of steel plates, whose density is from .07 to .08 that of water.[22] The first is not less than two inches and a half thick, and weighs 394 tons. The second envelope, the keel, twenty inches high and ten thick, weighs alone sixty-two tons. The engine, the ballast, the several accessories and apparatus appendages, the partitions and bulkheads, weigh 961.62 tons. Do you follow all this?"

"I do."

"Then, when the *Nautilus* is afloat under these circumstances, one-tenth is out of the water. Now, if I have made reservoirs of a size equal to this tenth,

or capable of holding 150 tons, and if I fill them with water, the boat, weighing then 1,507 tons, will be completely immersed. That would happen, professor. These reservoirs are in the lower parts of the *Nautilus.* I turn on taps and they fill, and the vessel sinks that had just been level with the surface."

"Well, captain, but now we come to the real difficulty. I can understand your rising to the surface; but diving below the surface, does not your submarine contrivance encounter a pressure, and consequently undergo an upward thrust of one atmosphere for every thirty feet of water, just about fifteen pounds per square inch?"

"Just so, sir."

"Then unless you quite fill the *Nautilus,* I do not see how you can draw it down to those depths."

"Professor, you must not confound statics with dynamics, or you will be exposed to grave errors. There is very little labor spent in attaining the lower regions of the ocean, for all bodies have a tendency to sink. When I wanted to find out the necessary increase of weight required to sink the *Nautilus,* I had only to calculate the reduction of volume that sea-water acquires according to the depth."

"That is evident."

"Now, if water is not absolutely incompressible, it is at least capable of very slight compression. Indeed, after the most recent calculations this reduction is only 0.000436 of an atmosphere for each thirty feet of depth. If we want to sink 3,000 feet, I should keep account of the reduction of bulk under a pressure equal to that of a column of water of a thousand feet. The calculation is easily verified. Now, I have supplementary reservoirs capable of holding a hundred tons. Therefore I can sink to a considerable depth. When I wish to rise to the level of the sea, I only let off the water, and empty all the reservoirs if I want the *Nautilus* to emerge from the tenth part of her total capacity.

I had nothing to object to these reasonings.

"I admit your calculations, captain," I replied, "I should be wrong to dispute them since daily experience confirms them; but I foresee a real difficulty in the way."

"What, sir?"

"When you are about 1,000 feet deep, the walls of the *Nautilus* bear a pressure of 100 atmospheres. If, then, just now you were to empty the supplementary reservoirs, to lighten the vessel, and to go up to the surface, the pumps must overcome the pressure of 100 atmospheres, which is 1,500 lbs. per square inch. From that a power "

"That electricity alone can give," said the captain hastily. "I repeat, sir, that the dynamic power of my engines is almost infinite. The pumps of the

Nautilus have an enormous power, as you must have observed when their jets of water burst like a torrent upon the *Abraham Lincoln.* Besides, I use subsidiary reservoirs only to attain a mean depth of 750 to 1,000 fathoms, and that with a view of managing my machines. Also, when I have a mind to visit the depths of the ocean five or six miles below the surface, I make use of slower but not less infallible means."

"What are they, captain?"

"That involves my telling you how the *Nautilus* is worked."

"I am impatient to learn."

"To steer this boat to starboard or port, to turn, in a word, following a horizontal plan, I use an ordinary rudder fixed on the back of the stern post, and with one wheel and some tackle to steer by. But I can also make the *Nautilus* rise and sink, and sink and rise, by a vertical movement by means of two inclined planes fastened to its sides, opposite the center of flotation, planes that move in every direction, and that are worked by powerful levers from the interior. If the planes are kept parallel with the boat, it moves horizontally. If slanted, the *Nautilus,* according to this inclination, and under the influence of the screw, either sinks diagonally or rises diagonally as it suits me. And even if I wish to rise more quickly to the surface, I ship the screw, and the pressure of the water causes the *Nautilus* to rise vertically like a balloon filled with hydrogen."

"Bravo, captain! But how can the steersman follow the route in the middle of the waters?"

"The steersman is placed in a glazed box, that is raised above the hull of the *Nautilus,* and furnished with lenses."

"Are these lenses capable of resisting such pressure?"

"Perfectly. Glass, which breaks at a blow, is, nevertheless, capable of offering considerable resistance. During some experiments of fishing by electric light in 1864 in the Northern Seas, we saw plates less than a third of an inch thick resist a pressure of sixteen atmospheres. Now, the glass that I use is not less than thirty times thicker."

"Granted. But, after all, in order to see, the light must exceed the darkness, and in the midst of the darkness in the water, how can you see?"

"Behind the steersman's cage is placed a powerful electric reflector, the rays from which light up the sea for half a mile in front."

"Ah! bravo, bravo, captain! Now I can account for this phosphorescence in the supposed narwhal that puzzled us so. I now ask you if the boarding of the *Nautilus* and of the *Scotia,* that has made such a noise, has been the result of a chance rencounter?"

"Quite accidental, sir. I was sailing only one fathom below the surface of

the water when the shock came. It had no bad result."

"None, sir. But now, about your rencounter with the *Abraham Lincoln?"*

"Professor, I am sorry for one of the best vessels in the American navy; but they attacked me, and I was bound to defend myself. I contented myself, however, with putting the frigate *hors de combat:* she will not have any difficulty in getting repaired at the next port."

"Ah, commander! your *Nautilus* is certainly a marvelous boat."

"Yes, professor; and I love it as if it were part of myself. If danger threatens one of your vessels on the ocean, the first impression is the feeling of an abyss above and below. On the *Nautilus,* men's hearts never fail them. No defects to be afraid of, for the double shell is as firm as iron; no rigging to attend to; no sails for the wind to carry away; no boilers to burst; no fire to fear, for the vessel is made of iron, not of wood; no coal to run short, for electricity is the only mechanical agent; no collision to fear, for it alone swims in deep water; no tempest to brave, for when it dives below the water, it reaches absolute tranquillity. There, sir! that is the perfection of vessels! And if it is true that the engineer has more confidence in the vessel than the builder, and the builder than the captain himself, you understand the trust I repose in my *Nautilus;* for I am at once captain, builder, and engineer."

"But how could you construct this wonderful *Nautilus* in secret?"

"Each separate portion, M. Aronnax, was brought from different parts of the globe. The keel was forged at Creusot, the shaft of the screw at Penn & Co.'s, London, the iron plates of the hull at Laird's of Liverpool, the screw itself at Scott's at Glasgow. The reservoirs were made by Cail & Co. at Paris, the engine by Krupp in Prussia, its beak in Motala's workshop in Sweden, its mathematical instruments by Hart Brothers, of New York, etc.; and each of these people had my orders under different names."

"But these parts had to be put together and arranged?"

"Professor, I had set up my workshops upon a desert island in the ocean. There my workmen, that is to say, the brave men that I instructed and educated, and myself have put together our *Nautilus.* Then, when the work was finished fire destroyed all trace of our proceedings on this island, that I could have jumped over if I had liked."

"Then the cost of this vessel is great?"

"M. Aronnax, an iron vessel costs £45 per ton. Now the *Nautilus* weighed 1,500. It came therefore to £67,500 and £80,000 more for fitting it up, and about £200,000 with the works of art and the collections it contains."

"One last question, Captain Nemo."

"Ask it, professor."

“You are rich?”

“Immensely rich, sir; and I could, without missing it, pay the national debt of France.”

I stared at the singular person who spoke thus. Was he playing upon my credulity? The future would decide that.

Chapter XIII

The Black River

THE PORTION OF THE terrestrial globe which is covered by water is estimated at upward of eighty millions of acres. This fluid mass comprises two billions two hundred and fifty millions of cubic miles, forming a spherical body of a diameter of sixty leagues, the weight of which would be three quintillions of tons. To comprehend the meaning of these figures, it is necessary to observe that a quintillion is to a billion as a billion is to unity; in other words, there are as many billions in a quintillion as there are units in a billion. This mass of fluid is equal to about the quantity of water which would be discharged by all the rivers of the earth in forty thousand years.

During the geological epochs, the igneous period succeeded to the aqueous. The ocean originally prevailed everywhere. Then by degrees, in the silurian period, the tops of the mountains began to appear, the islands emerged, then disappeared in partial deluges, reappeared, became settled, formed continents, till at length the earth became geographically arranged, as we see in the present day. The solid had wrested from the liquid thirty-seven million six hundred and fifty-seven square miles, equal to twelve billions nine hundred and sixty millions of acres.

The shape of continents allows us to divide the waters into five great portions: the Arctic or Frozen Ocean, the Antarctic or Frozen Ocean, the Indian, the Atlantic, and the Pacific Oceans.

The Pacific Ocean extends from north to south between the two polar circles, and from east to west between Asia and America, over an extent of 145 degrees of longitude. It is the quietest of seas; its currents are broad and slow, it has medium tides and abundant rain. Such was the ocean that my fate destined me first to travel over under these strange conditions.

“Sir,” said Captain Nemo, “we will, if you please, take our bearings and fix the starting-point of this voyage. It is a quarter to twelve. I will go up again to the surface.”

The captain pressed an electric clock three times. The pumps began to drive the water from the tanks; the needle of the manometer marked by a different pressure the ascent of the *Nautilus,* then it stopped.

“We have arrived,” said the captain.

I went to the central staircase which opened on to the platform, clambered up the iron steps, and found myself on the upper part of the *Nautilus.*

The platform was only three feet out of water. The front and back of the *Nautilus* was of that spindle-shape which caused it justly to be compared to a cigar. I noticed that its iron plates, slightly overlaying each other, resembled the shell which clothes the bodies of our large terrestrial reptiles. It explained to me how natural it was, in spite of all glasses, that this boat should have been taken for a marine animal.

Toward the middle of the platform the long-boat, half buried in the hull of the vessel, formed a slight excrescence. Fore and aft rose two cages of medium height with inclined sides, and partly closed by thick lenticular glasses; one destined for the steersman who directed the *Nautilus,* the other containing a brilliant lantern to give light on the road.

The sea was beautiful, the sky pure. Scarcely could the long vehicle feel the broad undulations of the ocean. A light breeze from the east rippled the surface of the waters. The horizon, free from fog, made observation easy. Nothing was in sight. Not a quicksand, not an island. A vast desert.

Captain Nemo, by the help of his sextant, took the altitude of the sun, which ought also to give the latitude. He waited for some moments till its disk touched the horizon. While taking observations not a muscle moved; the instrument could not have been more motionless in a hand of marble.

“Twelve o’clock, sir,” said he. “When you like——”

I cast a last look upon the sea, slightly yellowed by the Japanese coast, and descended to the saloon.

“And now, sir, I leave you to your studies,” added the captain; “our course is E.N.E., our depth is twenty-six fathoms. Here are maps on a large scale by which you may follow it. The saloon is at your disposal, and with your permission I will retire.” Captain Nemo bowed, and I remained alone, lost in thoughts all bearing on the commander of the *Nautilus.*

For a whole hour was I deep in these reflections, seeking to pierce this mystery so interesting to me. Then my eyes fell upon the vast planisphere spread upon the table, and I placed my finger on the very spot where the given latitude and longitude crossed.

The sea has its large rivers like the continents. They are special currents known by their temperature and their color. The most remarkable of these is known by the name of the Gulf Stream. Science has decided on the globe the direction of five principal currents: one in the North Atlantic, a second in the South, a third in the North Pacific, a fourth in the South, and a fifth in the Southern Indian Ocean. It is even probable that a sixth current existed at one time or another in the Northern Indian Ocean, when the Caspian and Aral Seas formed but one vast sheet of water.

At this point indicated on the planisphere one of these currents was rolling, the Kuro-Scivo of the Japanese, the Black River, which, leaving the Gulf of Bengal where it is warmed by the perpendicular rays of a tropical sun, crosses the Straits of Malacca along the coast of Asia, turns into the North Pacific to the Aleutian Islands, carrying with it trunks of camphor-trees and other indigenous productions, and edging the waves of the ocean with the pure indigo of its warm water. It was this current that the *Nautilus* was to follow. I followed it with my eye; saw it lose itself in the vastness of the Pacific, and felt myself drawn with it, when Ned Land and Conseil appeared at the door of the saloon.

My two brave companions remained petrified at the sight of the wonders spread before them.

"Where are we—where are we?" exclaimed the Canadian. "In the museum at Quebec?"

"My friends," I answered, making a sign to them to enter, "you are not in Canada, but on board the *Nautilus,* fifty yards below the level of the sea."

"But, M. Aronnax," said Ned Land, "can you tell me how many men there are on board? Ten, twenty, fifty, a hundred?"

"I cannot answer you, Mr. Land; it is better to abandon for a time all idea of seizing the *Nautilus* or escaping from it. This ship is a masterpiece of modern industry, and I should be sorry not to have seen it. Many people would accept the situation forced upon us, if only to move among such wonders. So be quiet and let us try and see what passes around us."

"See!" exclaimed the harpooner. "But we can see nothing in this iron prison! We are walking—we are sailing—blindly."

Ned Land had scarcely pronounced these words when all was suddenly darkness. The luminous ceiling was gone, and so rapidly that my eyes received a painful impression.

We remained mute, not stirring, and not knowing what surprise awaited us, whether agreeable or disagreeable. A sliding noise was heard: one would have said that panels were working at the sides of the *Nautilus.*

"It is the end of the end!" said Ned Land.

Suddenly light broke at each side of the saloon, through two oblong openings. The liquid mass appeared vividly lit up by the electric gleam. Two crystal plates separated us from the sea. At first I trembled at the thought that this frail partition might break, but strong bands of copper bound them, giving an almost infinite power of resistance.

The sea was distinctly visible for a mile all round the *Nautilus.* What a spectacle! What pen can describe it? Who could paint the effects of the light through those transparent sheets of water, and the softness of the successive gradations from the lower to the superior strata of the ocean?

We know the transparency of the sea, and that its clearness is far beyond that of rock water. The mineral and organic substances which it holds in suspension heighten its transparency. In certain parts of the ocean at the Antilles, under seventy-five fathoms of water, can be seen with surprising clearness a bed of sand. The penetrating power of the solar rays does not seem to cease for a depth of one hundred and fifty fathoms. But in this middle fluid traveled over by the *Nautilus* the electric brightness was produced even in the bosom of the waves. It was no longer luminous water, but liquid light.

On each side a window opened into this unexplored abyss. The obscurity of the saloon showed to advantage the brightness outside, and we looked out as if this pure crystal had been the glass of an immense aquarium.

"You wished to see, friend Ned; well, you see now."

"Curious! curious!" muttered the Canadian, who, forgetting his ill-temper, seemed to submit to some irresistible attraction; "and one would come further than this to admire such a sight!"

"Ah!" thought I to myself. "I understand the life of this man; he has made a world apart for himself, in which he treasures all his greatest wonders."

For two whole hours an aquatic army escorted the *Nautilus*. During their games, their bounds, while rivaling each other in beauty, brightness, and velocity, I distinguished the green labre; the banded mullet, marked by a double line of black; the round-tailed goby, of a white color, with violet spots on the back; the Japanese scombrus, a beautiful mackerel of these seas, with a blue body and silvery head; the brilliant azurors, whose name alone defies description; some banded spares, with variegated fins of blue and yellow; some aclostones, the woodcocks of the seas, some specimens of which attain a yard in length; Japanese salamanders, spider lampreys, serpents six feet long, with eyes small and lively, and a huge mouth bristling with teeth; with many other species.

Our imagination was kept at its height; interjections followed quickly on each other. Ned named the fish, and Conseil classed them.[23] I was in ecstasies with the vivacity of their movements and the beauty of their forms. Never had it been given to me to surprise these animals, alive and at liberty, in their natural element. I will not mention all the varieties which passed before my dazzled eyes, all the collection of the seas of China and Japan. These fish, more numerous than the birds of the air, came, attracted, no doubt, by the brilliant focus of the electric light.

Suddenly there was daylight in the saloon, the iron panels closed again, and the enchanting vision disappeared. But for a long time I dreamed on till my eyes fell on the instruments hanging on the partition. The compass still showed the course to be E.N.E., the manometer indicated a pressure of five atmospheres, equivalent to a depth of twenty-five fathoms, and the electric log gave a speed of fifteen miles an hour. I expected Captain Nemo, but he did not appear. The clock marked the hour of five.

Ned Land and Conseil returned to their cabin, and I retired to my chamber. My dinner was ready. It was composed of turtle soup made of the most delicate hawksbills, of a surmullet served with puff paste (the liver of which, prepared by itself, was most delicious), and fillets of the emperor-holocanthus, the savor of which seemed to me superior even to salmon.

I passed the evening reading, writing, and thinking. Then sleep overpowered me, and I stretched myself on my couch of zostera, and slept profoundly, while the *Nautilus* was gliding rapidly through the current of the Black River.

Chapter XIV

A Note of Invitation

THE NEXT DAY WAS the 9th of November. I awoke after a long sleep of twelve hours. Conseil came, according to custom, to know "how had I passed the night," and to offer his services. He had left his friend the Canadian sleeping like a man who had never done anything else all his life. I let the worthy fellow chatter as he pleased, without caring to answer him. I was preoccupied by the absence of the captain during our sitting of the day before, and hoping to see him to-day.

As soon as I was dressed I went into the saloon. It was deserted.

I plunged into the study of the conchological treasures hidden behind the glasses. I reveled also in great herbals filled with the rarest marine plants, which, although dried up, retained their lovely colors. Among these precious hydrophytes I remarked some vorticellæ, pavonariæ, delicate ceramies with scarlet tints, some fan-shaped agari, and some natabuli like flat mushrooms, which at one time used to be classed as zoöphytes; in short, a perfect series of algæ.

The whole day passed without my being honored by a visit from Captain Nemo. The panels of the saloon did not open. Perhaps they did not wish us to tire of these beautiful things.

The course of the *Nautilus* was E.N.E., her speed twelve knots, the depth below the surface between twenty-five and thirty fathoms.

The next day, 10th of November, the same desertion, the same solitude. I did not see one of the ship's crew; Ned and Conseil spent the greater part of the day with me. They were astonished at the inexplicable absence of the captain. Was this singular man ill? Had he altered his intentions with regard to us?

After all, as Conseil said, we enjoyed perfect liberty, we were delicately and abundantly fed. Our host kept to his terms of the treaty. We could not complain, and, indeed, the singularity of our fate reserved such wonderful compensation for us that we had no right to accuse it as yet.

That day I commenced the journal of these adventures which has enabled me to relate them with more scrupulous exactitude and minute detail. I wrote it on paper made from the zostera marina.

November 11th, early in the morning. The fresh air spreading over the interior of the *Nautilus* told me that we had come to the surface of the ocean to renew our supply of oxygen. I directed my steps to the central staircase, and mounted the platform.

It was six o'clock, the weather was cloudy, the sea gray but calm. Scarcely a billow. Captain Nemo, whom I hoped to meet, would he be there? I saw no one but the steersman imprisoned in his glass cage. Seated upon the projection formed by the hull of the pinnace, I inhaled the salt breeze with delight.

By degrees the fog disappeared under the action of the sun's rays, the radiant orb rose from behind the eastern horizon. The sea flamed under its glance like a train of gunpowder. The clouds scattered in the heights were colored with lively tints of beautiful shades, and numerous "mare's tails,"[ai] which betokened wind for that day. But what was wind to this *Nautilus,* which tempests could not frighten!

I was admiring this joyous rising of the sun, so gay, and so life-giving, when I heard steps approaching the platform. I was prepared to salute Captain Nemo, but it was his second (whom I had already seen on the captain's first visit) who appeared. He advanced on the platform, not seeming to see me. With his powerful glass to his eye he scanned every point of the horizon with great attention. This examination over, he approached the panel and pronounced a sentence in exactly these terms. I have remembered it, for every morning it was repeated under exactly the same conditions. It was thus worded:

"Nautron respoc lorni virch."

What it meant I could not say.

These words pronounced, the second descended. I thought that the *Nautilus* was about to return to its submarine navigation. I regained the panel and returned to my chamber.

Five days sped thus, without any change in our situation. Every morning I mounted the platform. The same phrase was pronounced by the same individual. But Captain Nemo did not appear.

I had made up my mind that I should never see him again, when, on the 16th of November, on returning to my room with Ned and Conseil, I found upon my table a note addressed to me. I opened it impatiently. It was written in a bold, clear hand, the characters rather pointed, recalling the German type. The note was worded as follows:

16TH OF NOVEMBER, 1867

To PROFESSOR ARONNAX, ON BOARD THE *NAUTILUS:*

Captain Nemo invites Professor Aronnax to a hunting-party, which will take place to-morrow morning in the forests of the island of Crespo.[aj] He hopes that nothing will prevent the professor from being present, and he will with pleasure see him joined by his companions.

CAPTAIN NEMO, COMMANDER OF THE *NAUTILUS*.

“A hunt!” exclaimed Ned.

“And in the forests of the island of Crespo!” added Conseil.

“Oh, then the gentleman is going on *terra firma?”*[ak] replied Ned Land.

“That seems to me to be clearly indicated,” said I, reading the letter once more.

“Well, we must accept,” said the Canadian. “But once more on dry ground, we shall know what to do. Indeed, I shall not be sorry to eat a piece of fresh venison.”

Without seeking to reconcile what was contradictory between Captain Nemo’s manifest aversion to islands and continents, and his invitation to hunt in a forest, I contented myself with replying:

“Let us first see where the island of Crespo is.”

I consulted the planisphere, and in 32° 40’ north lat., and 157° 50’ west long., I found a small island, recognized in 1801 by Captain Crespo, and marked in the ancient Spanish maps as Rocca de la Plata, the meaning of which is “The Silver Rock.” We were then about eighteen hundred miles from our starting-point, and the course of the *Nautilus,* a little changed, was bringing it back toward the southeast.

I showed this little rock lost in the midst of the North Pacific to my companions.

“If Captain Nemo does sometimes go on dry ground,” said I, “he at least chooses desert islands.”

Ned Land shrugged his shoulders without speaking, and Conseil and he left me.

After supper, which was served by the steward, mute and impassible, I went to bed, not without some anxiety.

The next morning, the 17th of November, on awakening I felt that the *Nautilus* was perfectly still. I dressed quickly and entered the saloon.

Captain Nemo was there, waiting for me. He rose, bowed, and asked me if it was convenient for me to accompany him. As he made no allusion to his absence during the last eight days, I did not mention it, and simply answered that my companions and myself were ready to follow him.

We entered the dining-room, where breakfast was served.

“M. Aronnax,” said the captain, “pray share my breakfast without ceremony, we will chat as we eat. For though I promised you a walk in the forest, I did not undertake to find hotels there. So breakfast as a man who will most likely not have his dinner till very late.”

I did honor to the repast. It was composed of several kinds of fish, and slices of holothuridæ (excellent zoöphytes), and different sorts of seaweed. Our drink consisted of pure water, to which the captain added some drops of a fermented liquor, extracted by the Kamschatcha method from a seaweed known under the name of Rhodomenia palmata. Captain Nemo ate at first without saying a word. Then he began:

“Sir, when I proposed to you to hunt in my submarine forest of Crespo, you evidently thought me mad. Sir, you should never judge lightly of any man.”

“But, captain, believe me——”

“Be kind enough to listen, and you will then see whether you have any cause to accuse me of folly and contradiction.”

“I listen.”

“You know as well as I do, professor, that man can live under water, providing he carries with him a sufficient supply of breathable air. In submarine works, the workman, clad in an impervious dress, with his head in a metal helmet, receives air from above by means of forcing-pumps and regulators.”

“That is a diving apparatus,” said I.

“Just so; but under these conditions the man is not at liberty; he is attached to the pump which sends him air through an India-rubber tube, and if we were obliged to be thus held to the *Nautilus,* we could not go far.”

“And the means of getting free?” I asked.

“It is to use the Rouquayrol apparatus, invented by two of your own countrymen,[24] which I have brought to perfection for my own use, and which will allow you to risk yourself under these new physiological conditions, without any organ whatever suffering. It consists of a reservoir of thick iron plates, in which I store the air under a pressure of fifty atmospheres. This reservoir is fixed on the back by means of braces, like a soldier’s knapsack. Its upper part forms a box in which the air is kept by means of a bellows, and therefore cannot escape unless at its normal tension. In the Rouquayrol apparatus such as we use, two India-rubber pipes leave this box and join a sort of tent which holds the nose and mouth; one is to introduce fresh air, the other to let out the foul, and the tongue closes one or the other according to the wants of the respirator. But I, in encountering great pressures at the bottom of the sea, was obliged to shut my head, like that of a diver, in a ball

of copper, and it is to this ball of copper that the two pipes, the inspirator and the expirator, open."

"Perfectly, Captain Nemo; but the air that you carry with you must soon be used; when it only contains fifteen per cent. of oxygen, it is no longer fit to breathe."

"Right! But I told you, M. Aronnax, that the pumps of the *Nautilus* allow me to store the air under considerable pressure; and on those conditions, the reservoir of the apparatus can furnish breathable air for nine or ten hours."

"I have no further objections to make," I answered. "I will only ask you one thing, captain—how can you light your road at the bottom of the sea?"

"With the Ruhmkorff apparatus, M. Aronnax, one is carried on the back, the other is fastened to the waist. It is composed of a Bunsen pile, which I do not work with bichromate of potash, but with sodium. A wire is introduced which collects the electricity produced, and directs it toward a particularly made lantern. In this lantern is a spiral glass which contains a small quantity of carbonic gas. When the apparatus is at work, this gas becomes luminous, giving out a white and continuous light. Thus provided, I can breathe and I can see."

"Captain Nemo, to all my objections you make such crushing answers that I dare no longer doubt. But if I am forced to admit the Rouquayrol and Ruhmkorff apparatus, I must be allowed some reservations with regard to the gun I am to carry."

"But it is not a gun for powder," answered the captain.

"Then it is an air-gun."

"Doubtless! How would you have me manufacture gunpowder on board, without either saltpeter, sulphur, or charcoal?"

"Besides," I added, "to fire under water in a medium eight hundred and fifty-five times denser than the air, we must conquer very considerable resistance."

"That would be no difficulty. There exist guns, according to Fulton, perfected in England by Philip Coles and Burley, in France by Furcy, and in Italy by Landi, which are furnished with a peculiar system of closing, which can fire under these conditions. But I repeat, having no powder, I use air under great pressure, which the pumps of the *Nautilus* furnish abundantly."

"But this air must be rapidly used?"

"Well, have I not my Rouquayrol reservoir, which can furnish it at need? A tap is all that is required. Besides, M. Aronnax, you must see yourself that during our submarine hunt we can spend but little air and but few balls."

"But it seems to me that in this twilight, and in the midst of this fluid,

which is very dense compared with the atmosphere, shots could not go far, nor easily prove mortal."

"Sir, on the contrary, with this gun every blow is mortal, and however lightly the animal is touched, it falls as if struck by a thunderbolt."

"Why?"

"Because the balls sent by this gun are not ordinary balls, but little cases of glass (invented by Leniebroek, an Austrian chemist), of which I have a large supply. These glass cases are covered with a case of steel, and weighted with a pellet of lead; they are real Leyden bottles, [al] into which the electricity is forced to a very high tension. With the slightest shock they are discharged, and the animal, however strong it may be, falls dead. I must tell you that these cases are size number four, and that the charge for an ordinary gun would be ten."

"I will argue no longer," I replied, rising from the table; "I have nothing left me but to take my gun. At all events, I will go where you go."

Captain Nemo then led me aft; and in passing before Ned and Conseil's cabin, I called my two companions, who followed immediately. We then came to a kind of cell near the machinery-room, in which we were to put on our walking-dress.

Chapter XV

A Walk on the Bottom of the Sea

THIS CELL WAS, TO speak correctly, the arsenal and wardrobe of the *Nautilus*. A dozen diving apparatus hung from the partition, waiting our use.

Ned Land, on seeing them, showed evident repugnance to dress himself in one.

"But, my worthy Ned, the forests of the island of Crespo are nothing but submarine forests."

"Good!" said the disappointed harpooner, who saw his dreams of fresh meat fade away. "And you, M. Aronnax, are you going to dress yourself in those clothes?"

"There is no alternative, Master Ned."

"As you please, sir," replied the harpooner, shrugging his shoulders; "but as for me, unless I am forced, I will never get into one."

"No one will force you, Master Ned," said Captain Nemo.

"Is Conceil going to risk it?" asked Ned.

"I follow my master wherever he goes," replied Conseil.

At the captain's call two of the ship's crew came to help us to dress in these heavy and impervious clothes, made of India-rubber without seam, and constructed expressly to resist considerable pressure. One would have thought it a suit of armor, both supple and resisting. This suit formed trousers and waistcoat. The trousers were finished off with thick boots, weighted with heavy leaden soles. The texture of the waistcoat was held together by bands of copper, which crossed the chest, protecting it from the great pressure of the water, and leaving the lungs free to act; the sleeves ended in gloves, which in no way restrained the movement of the hands. There was a vast difference noticeable between these consummate apparatus and the old cork breastplates, jackets, and other contrivances in vogue during the eighteenth century.

Captain Nemo and one of his companions (a sort of Hercules, who must have possessed great strength), Conseil, and myself, were soon enveloped in the dresses. There remained nothing more to be done but to inclose our heads

in the metal box. But before proceeding to this operation, I asked the captain's permission to examine the guns we were to carry.

One of the *Nautilus* men gave me a simple gun, the butt end of which, made of steel hollow in the center, was rather large. It served as a reservoir for compressed air, which a valve worked by a spring allowed to escape into a metal tube. A box of projectiles, in a groove, in the thickness of the butt end, contained about twenty of these electric balls, which by means of a spring were forced into the barrel of the gun. As soon as one shot was fired, another was ready.

"Captain Nemo," said I, "this arm is perfect, and easily handled; I only ask to be allowed to try it. But how shall we gain the bottom of the sea?"

"At this moment, professor, the *Nautilus* is stranded in five fathoms, and we have nothing to do but to start."

"But how shall we get off?"

"You shall see."

Captain Nemo thrust his head into the helmet; Conseil and I did the same, not without hearing an ironical "Good sport!" from the Canadian. The upper part of our dress terminated in a copper collar upon which was screwed the metal helmet. Three holes, protected by thick glass, allowed us to see in all directions, by simply turning our heads in the interior of the head-dress. As soon as it was in position, the Rouquayrol apparatus on our backs began to act; and, for my part, I could breathe with ease.

With the Ruhmkorff lamp hanging from my belt, and the gun in my hand, I was ready to set out. But to speak the truth, imprisoned in these heavy garments, and glued to the deck by my leaden soles, it was impossible for me to take a step.

But this state of things was provided for. I felt myself being pushed into a little room contiguous to the wardrobe-room. My companions followed, towed along in the same way. I heard a water-tight door, furnished with stopper-plates, close upon us, and we were wrapped in profound darkness.

After some minutes, a loud hissing was heard. I felt the cold mount from my feet to my chest. Evidently from some part of the vessel they had by means of a tap given entrance to the water, which was invading us, and with which the room was soon filled. A second door cut in the side of the *Nautilus* then opened. We saw a faint light. In another instant our feet trod the bottom of the sea.

And now, how can I retrace the impression left upon me by that walk under the waters? Words are impotent to relate such wonders! Captain Nemo walked in front, his companion followed some steps behind. Conseil and I remained near each other, as if an exchange of words had been possible through our metallic cases. I no longer felt the weight of my clothing, or of my

shoes, of my reservoir of air, or my thick helmet, in the midst of which my head rattled like an almond in its shell.

The light, which lit the soil thirty feet below the surface of the ocean, astonished me by its power. The solar rays shone through the watery mass easily, and dissipated all color, and I clearly distinguished objects at a distance of a hundred and fifty yards. Beyond that the tints darkened into fine gradations of ultramarine, and faded into vague obscurity. Truly this water which surrounded me was but another air denser than the terrestrial atmosphere, but almost as transparent. Above me was the calm surface of the sea. We were walking on fine, even sand, not wrinkled, as on a flat shore, which retains the impression of the billows. This dazzling carpet, really a reflector, repelled the rays of the sun with wonderful intensity, which accounted for the vibration which penetrated every atom of liquid. Shall I be believed when I say that, at the depth of thirty feet, I could see as if I was in broad daylight?

For a quarter of an hour I trod on this sand, sown with the impalpable dust of shells. The hull of the *Nautilus,* resembling a long shoal, disappeared by degrees, but its lantern, when darkness should overtake us in the waters, would help to guide us on board by its distinct rays.

Soon forms of objects outlined in the distance were discernible. I recognized magnificent rocks, hung with a tapestry of zoöphytes of the most beautiful kind, and I was at first struck by the peculiar effect of this medium.

It was then ten in the morning; the rays of the sun struck the surface of the waves at rather an oblique angle, and at the touch of their light, decomposed by refraction as through a prism, flowers, rocks, plants, shells, and polypi were shaded at the edges by the seven solar colors. It was marvelous, a feast for the eyes, this complication of colored tints, a perfect kaleidoscope of green, yellow, orange, violet, indigo, and blue; in one word, the whole palette of an enthusiastic colorist! Why could I not communicate to Conseil the lively sensations which were mounting to my brain, and rival him in expressions of admiration? For aught I knew, Captain Nemo and his companion might be able to exchange thoughts by means of signs previously agreed upon. So for want of better, I talked to myself; I declaimed in the copper box which covered my head, thereby expending more air in vain words than was, perhaps, expedient.

Various kinds of isis, clusters of pure tuft-coral, prickly fungi, and anemones, formed a brilliant garden of flowers, enameled with porphitæ, decked with their collarettes of blue tentacles, sea-stars studding the sandy bottom, together with asterophytons like fine lace embroidered by the hands of naiads, whose festoons were waved by the gentle undulations caused by our walk. It was a real grief to me to crush under my feet the brilliant specimens of mollusks which strewed the ground by thousands, of hammerheads, donaciae (veritable bounding shells), of staircases, and red helmet-shells, angel-wings, and many others produced by this inexhaustible ocean. But we were bound to walk, so we went on, while above our heads waved shoals of

physalides leaving their tentacles to float in their train, medusæ whose umbrellas of opal or rose-pink, escalloped with a band of blue, sheltered us from the rays of the sun, and fiery pelagiæ, which in the darkness would have strewn our path with phosphorescent light.

All these wonders I saw in the space of a quarter of a mile, scarcely stopping, and following Captain Nemo, who beckoned me on by signs. Soon the nature of the soil changed; to the sandy plain succeeded an extent of slimy mud, which the Americans call "ooze," composed of equal parts of silicious and calcareous shells. We then traveled over a plain of seaweed of wild and luxuriant vegetation. This sward was of close texture, and soft to the feet, and rivaled the softest carpet woven by the hand of man. But while verdure was spread at our feet, it did not abandon our heads. A light network of marine plants, of that inexhaustible family of seaweeds of which more than two thousand kinds are known, grew on the surface of the water. I saw long ribbons of fucus floating, some globular, others tuberous; laurenciæ and cladostephi of most delicate foliage, and some rhodomeniæ palmatæ resembling the fan of a cactus. I noticed that the green plants kept nearer the top of the sea, while the red were at a greater depth, leaving to the black or brown hydrophytes the care of forming gardens and parterres in the remote beds of the ocean.

We had quitted the *Nautilus* about an hour and a half. It was near noon; I knew by the perpendicularity of the sun's rays, which were no longer refracted. The magical colors disappeared by degrees, and the shades of emerald and sapphire were effaced. We walked with a regular step, which rang upon the ground with astonishing intensity; the slightest noise was transmitted with a quickness to which the ear is unaccustomed on the earth; indeed, water is a better conductor of sound than air, in the ratio of four to one. At this period the earth sloped downward; the light took a uniform tint. We were at a depth of a hundred and five yards and twenty inches, undergoing a pressure of six atmospheres.

At this depth I could still see the rays of the sun, though feebly; to their intense brilliancy had succeeded a reddish twilight, the lowest state between day and night; but we could still see well enough; it was not necessary to resort to the Ruhmkorff apparatus as yet. At this moment Captain Nemo stopped; he waited till I joined him, and then pointed to an obscure mass, looming in the shadow, at a short distance.

"It is the forest of the island of Crespo," thought I: and I was not mistaken.

Chapter XVI

A Submarine Forest

WE HAD AT LAST arrived on the borders of this forest, doubtless one of the finest of Captain Nemo's immense domains. He looked upon it as his own, and considered he had the same right over it that the first men had in the first days of the world. And, indeed, who would have disputed with him the possession of this submarine property? What other hardier pioneer would come, hatchet in hand, to cut down the dark copses?

This forest was composed of large tree-plants; and the moment we penetrated under its vast arcades, I was struck by the singular position of their branches—a position I had not yet observed.

Not an herb which carpeted the ground, not a branch which clothed the trees, was either broken or bent, nor did they extend horizontally; all stretched up to the surface of the ocean. Not a filament, not a ribbon, however thin they might be, but kept as straight as a rod of iron. The fuci and llianas grew in rigid perpendicular lines, due to the density of the element which had produced them. Motionless, yet, when bent to one side by the hand, they directly resumed their former position. Truly it was the region of perpendicularity!

I soon accustomed myself to this fantastic position, as well as to the comparative darkness which surrounded us. The soil of the forest seemed covered with sharp blocks, difficult to avoid. The submarine flora struck me as being very perfect, and richer even than it would have been in the arctic or tropical zones, where these productions are not so plentiful. But for some minutes I involuntarily confounded the genera, taking zoöphytes for hydrophytes, animals for plants, and who would not have been mistaken? The fauna and the flora are too closely allied in this submarine world.

These plants are self-propagated, and the principle of their existence is in the water, which upholds and nourishes them. The greater number, instead of leaves, shoot forth blades of capricious shapes comprised within a scale of colors—pink, carmine, green, olive, fawn, and brown. I saw there (but not dried up, as our specimens of the Nautilus are) pavonari spread like a fan as if to catch the breeze; scarlet ceramies, whose laminaries extended their edible shoots of fern-shaped nereocysti, which grow to a height of fifteen feet; clusters of acetabuli, whose stems increase in size upward; and numbers of other marine plants, all devoid of flowers!

“Curious anomaly! fantastic element,” said an ingenious naturalist, “in which the animal kingdom blossoms, and the vegetable does not!”

Under these numerous shrubs (as large as trees of the temperate zone), and under their damp shadow, were massed together real bushes of living flowers, hedges of zoöphytes, on which blossomed some zebra-meandrines, with crooked grooves; some yellow caryophylliae; and to complete the illusion, the fish-flies flew from branch to branch like a swarm of humming-birds, while yellow lepisacomthi, with bristling jaws, dactylopteri, and monocentrides rose at our feet like a flight of snipes.

In about an hour Captain Nemo gave the signal to halt. I, for my part, was not sorry, and we stretched ourselves under an arbor of alariæ, the long thin blades of which stood up like arrows.

This short rest seemed delicious to me; there was nothing wanting but the charm of conversation; but, impossible to speak, impossible to answer, I only put my great copper head to Conseil’s. I saw the worthy fellows eyes glistening with delight, and to show his satisfaction he shook himself in his breastplate of air, in the most comical way in the world.

After four hours of this walking I was surprised not to find myself dreadfully hungry. How to account for this state of the stomach I could not tell. But instead I felt an insurmountable desire to sleep, which happens to all divers. And my eyes soon closed behind the thick glasses, and I fell into a heavy slumber, which the movement alone had prevented before. Captain Nemo and his robust companion, stretched in the clear crystal, set us the example.

How long I remained buried in this drowsiness I cannot judge; but when I woke, the sun seemed sinking toward the horizon. Captain Nemo had already risen, and I was beginning to stretch my limbs, when an unexpected apparition brought me briskly to my feet.

A few steps off, a monster sea-spider, about thirty-eight inches high, was watching me with squinting eyes, ready to spring upon me. Though my diver’s dress was thick enough to defend me from the bite of this animal, I could not help shuddering with horror. Conseil and the sailor of the *Nautilus* awoke at this moment. Captain Nemo pointed out the hideous crustacean, which a blow from the butt end of the gun knocked over, and I saw the horrible claws of the monster writhe in terrible convulsions. This accident reminded me that other animals more to be feared might haunt these obscure depths, against whose attacks my diving-dress would not protect me. I had never thought of it before, but I now resolved to be upon my guard. Indeed, I thought that this halt would mark the termination of our walk; but I was mistaken, for, instead of returning to the *Nautilus,* Captain Nemo continued his bold excursion. The ground was still on the incline, its declivity seemed to be getting greater, and to be leading us to greater depths. It must have been about three o’clock when we reached a narrow valley, between high perpendicular walls, situated about seventy-five fathoms deep. Thanks to the perfection of our apparatus, we were

forty-five fathoms below the limit which nature seems to have imposed on man as to his submarine excursions.

I say seventy-five fathoms, though I had no instrument by which to judge the distance. But I knew that even in the clearest waters the solar rays could not penetrate further. And accordingly the darkness deepened. At ten paces not an object was visible. I was groping my way, when I suddenly saw a brilliant white light. Captain Nemo had just put his electric apparatus into use; his companion did the same, and Conseil and I followed their example. By turning a screw I established a communication between the wire and the spiral glass, and the sea, lit by our four lanterns, was illuminated for a circle of thirty-six yards.

Captain Nemo was still plunging into the dark depths of the forest, whose trees were getting scarcer at every step. I noticed that vegetable life disappeared sooner than animal life. The medusæ had already abandoned the arid soil, from which a great number of animals, zoöphytes, articulata, mollusks, and fishes, still obtained sustenance.

As we walked, I thought the light of our Ruhmkorff apparatus could not fail to draw some inhabitant from its dark couch. But if they did approach us, they at least kept at a respectful distance from the hunters. Several times I saw Captain Nemo stop, put his gun to his shoulder, and after some moments drop it and walk on. At last, after about four hours, this marvelous excursion came to an end. A wall of superb rocks, in an imposing mass, rose before us, a heap of gigantic blocks, an enormous steep granite shore, forming dark grottoes, but which presented no practicable slope; it was the prop of the island of Crespo. It was the earth! Captain Nemo stopped suddenly. A gesture of his brought us all to a halt; and however desirous I might be to scale the wall, I was obliged to stop. Here ended Captain Nemo's domains, and he would not go beyond them. Further on was a portion of the globe he might not trample upon.

The return began. Captain Nemo had returned to the head of his little band, directing their course without hesitation. I thought we were not following the same road to return to the *Nautilus*. The new road was very steep, and consequently very painful. We approached the surface of the sea rapidly. But this return to the upper strata was not so sudden as to cause relief from the pressure too rapidly, which might have produced serious disorder in our organization, and brought on internal lesions, so fatal to divers. Very soon light reappeared and grew, and the sun being low on the horizon, the refraction edged the different objects with a spectral ring. At ten yards and a half deep, we walked amid a shoal of little fishes of all kinds, more numerous than the birds of the air, and also more agile; but no aquatic game worthy of a shot had as yet met our gaze, when at that moment I saw the captain shoulder his gun quickly, and follow a moving object into the shrubs. He fired—I heard a slight hissing, and a creature fell stunned at some distance from us. It was a magnificent sea-otter, an enhydrus, the only exclusively marine quadruped. This otter was five feet long, and must have been very valuable. Its skin, chestnut-brown above and silvery underneath, would have made one of those beautiful furs so sought after in the Russian and Chinese markets; the fineness

and the luster of its coat would certainly fetch £80. I admired this curious mammal, with its rounded head ornamented with short ears, its round eyes, and white whiskers like those of a cat, with webbed feet and nails, and tufted tail. This precious animal, hunted and tracked by fishermen, has now become very rare, and taken refuge chiefly in the northern parts of the Pacific, or probably its race would soon become extinct.

Captain Nemo's companion took the beast, threw it over his shoulder, and we continued our journey. For one hour a plain of sand lay stretched before us. Sometimes it rose to within two yards and some inches of the surface of the water. I then saw our image clearly reflected, drawn inversely, and above us appeared an identical group reflecting our movements and our actions; in a word, like us in every point, except that they walked with their heads downward and their feet in the air.

Another effect I noticed, which was the passage of thick clouds, which formed and vanished rapidly; but on reflection I understood that these seeming clouds were due to the varying thickness of the reeds at the bottom, and I could even see the fleecy foam which their broken tops multiplied on the water, and the shadows of large birds passing above our heads, whose rapid flight I could discern on the surface of the sea.

On this occasion I was witness to one of the finest gunshots which ever made the nerves of a hunter thrill. A large bird of great breadth of wing, clearly visible, approached, hovering over us. Captain Nemo's companion shouldered his gun and fired, when it was only a few yards above the waves. The creature fell stunned, and the force of its fall brought it within the reach of the dexterous hunter's grasp. It was an albatross[am] of the finest kind.

Our march had not been interrupted by this incident. For two hours we followed these sandy plains, then fields of algae very disagreeable to cross. Candidly, I could do no more when I saw a glimmer of light, which for a half-mile broke the darkness of the waters. It was the lantern of the *Nautilus*. Before twenty minutes were over we should be on board, and I should be able to breathe with ease, for it seemed that my reservoir supplied air very deficient in oxygen. But I did not reckon on an accidental meeting, which delayed our arrival for some time.

I had remained some steps behind, when I presently saw Captain Nemo coming hurriedly toward me. With his strong hand he bent me to the ground, his companion doing the same to Conseil. At first I knew not what to think of this sudden attack, but I was soon reassured by seeing the captain lie down beside me, and remain immovable.

I was stretched on the ground, just under shelter of a bush of algæ, when, raising my head, I saw some enormous mass, casting phosphorescent gleams, pass blusteringly by.

My blood froze in my veins as I recognized two formidable sharks which threatened us. It was a couple of tintoreas, terrible creatures, with enormous

tails and a dull glassy stare, the phosphorescent matter ejected from holes pierced around the muzzle. Monstrous brutes, which would crush a whole man in their iron jaws! I did not know whether Conseil stopped to classify them; for my part, I noticed their silver bellies, and their huge mouths bristling with teeth, from a very unscientific point of view, and more as a possible victim than as a naturalist.

Happily the voracious creatures do not see well. They passed without seeing us, brushing us with their brownish fins, and we escaped by a miracle from a danger certainly greater than meeting a tiger full-face in the forest. Half an hour after, guided by the electric light, we reached the Nautilus. The outside door had been left open, and Captain Nemo closed it as soon as we had entered the first cell. He then pressed a knob. I heard the pumps working in the midst of the vessel. I felt the water sinking from around me, and in a few moments the cell was entirely empty. The inside door then opened, and we entered the vestry.

There our diving-dress was taken off, not without some trouble; and, fairly worn out from want of food and sleep, I returned to my room, in great wonder at this surprising excursion at the bottom of the sea.

Chapter XVII

Four Thousand Leagues Under the Pacific

THE NEXT MORNING, THE 18th of November, I had quite recovered from my fatigues of the day before, and I went up on to the platform, just as the second lieutenant was uttering his daily phrase.

I was admiring the magnificent aspect of the ocean when Captain Nemo appeared. He did not seem to be aware of my presence, and began a series of astronomical observations. Then, when he had finished, he went and leaned on the cage of the watchlight, and gazed abstractedly on the ocean. In the meantime, a number of the sailors of the *Nautilus,* all strong and healthy men, had come up on to the platform. They came to draw up the nets that had been laid all night. These sailors were evidently of different nations, although the European type was visible in all of them. I recognized some unmistakable Irishmen, Frenchmen, some Slavs, and a Greek or a Candiote.[an] They were civil, and only used that odd language among themselves, the origin of which I could not guess, neither could I question them.

The nets were hauled in. They were a large kind of “chaluts,” like those on the Normandy coast, great pockets that the waves and a chain fixed in the smaller meshes kept open. These pockets, drawn by iron poles, swept through the water, and gathered in everything in their way. That day they brought up curious specimens from those productive coasts—fishing-frogs that, from their comical movements, have acquired the name of buffoons; black commersons, furnished with antennae; trigger-fish, encircled with red bands; orthragorisci, with very subtle venom; some olive-colored lampreys; macrorhynci, covered with silvery scales; trichiuri, the electric power of which is equal to that of the gymnotus and cramp-fish; scaly notopteri, with transverse brown bands; greenish cod; several varieties of gobies, etc.; also some larger fish; a caranx with a prominent head a yard long; several fine bonitos, streaked with blue and silver; and three splendid tunnies, which, in spite of the swiftness of their motion, had not escaped the net.

I reckoned that the haul had brought in more than nine hundredweight of fish. It was a fine haul, but not to be wondered at. Indeed, the nets are let down for several hours, and inclose in their meshes an infinite variety. We had no lack of excellent food, and the rapidity of the *Nautilus* and the attraction of the electric light could always renew our supply. These several productions of the sea were immediately lowered through the panel to the steward’s room, some to be eaten fresh, and others pickled.

The fishing ended, the provision of air renewed, I thought that the *Nautilus* was about to continue its submarine excursion, and was preparing to return to my room, when, without further preamble, the captain turned to me, saying:

"Professor, is not this ocean gifted with real life? It has its tempers and its gentle moods. Yesterday it slept as we did, and now it has woke after a quiet night. Look!" he continued. "It wakes under the caresses of the sun. It is going to renew its diurnal existence. It is an interesting study to watch the play of its organization. It has a pulse, arteries, spasms; and I agree with the learned Maury,[25] who discovered in it a circulation as real as the circulation of blood in animals.

"Yes, the ocean has indeed circulation, and to promote it, the Creator has caused things to multiply in it—caloric, salt, and animalculæ." [ao]

When Captain Nemo spoke thus, he seemed altogether changed, and aroused an extraordinary emotion in me.

"Also," he added, "true existence is there; and I can imagine the foundations of nautical towns, clusters of submarine houses, which, like the *Nautilus,* would ascend every morning to breathe at the surface of the water—free towns, independent cities. Yet who knows whether some despot——"

Captain Nemo finished his sentence with a violent gesture. Then, addressing me as if to chase away some sorrowful thought:

"M. Aronnax," he asked, "do you know the depth of the ocean?"

"I only know, captain, what the principal soundings have taught us."

"Could you tell me them, so that I can suit them to my purpose?"

"These are some," I replied, "that I remember. If I am not mistaken, a depth of 8,000 yards has been found in the North Atlantic, and 2,500 yards in the Mediterranean. The most remarkable soundings have been made in the South Atlantic, near the 35th parallel, and they gave 12,000 yards, 14,000 yards, and 15,000 yards. To sum up all, it is reckoned that if the bottom of the sea were leveled, its mean depth would be about one and three-quarter leagues."

"Well, professor," replied the captain, "we shall show you better than that, I hope. As to the mean depth of this part of the Pacific, I tell you it is only 4,000 yards."

Having said this, Captain Nemo went toward the panel, and disappeared down the ladder. I followed him, and went into the large drawing-room. The screw was immediately put in motion, and the log gave twenty miles an hour.

During the days and weeks that passed, Captain Nemo was very sparing of his visits. I seldom saw him. The lieutenant pricked the ship's course regularly on the chart, so I could always tell exactly the route of the *Nautilus.*

Nearly every day, for some time, the panels of the drawing-room were opened, and we were never tired of penetrating the mysteries of the submarine world.

The general direction of the *Nautilus* was southeast, and it kept between 100 and 150 yards of depth. One day, however, I do not know why, being drawn diagonally by means of the inclined planes, it touched the bed of the sea. The thermometer indicated a temperature of 4.25 (Cent.); a temperature that at this depth seemed common to all latitudes.

At three o'clock on the morning of the 26th of November, the *Nautilus* crossed the Tropic of Cancer at 172° longitude. On the 27th instant it sighted the Sandwich Islands, where Cook died, February 14, 1779.[26] We had then gone 4,860 leagues from our starting-point. In the morning, when I went on the platform, I saw, two miles to windward, Hawaii, the largest of the seven islands that form the group. I saw clearly the cultivated ranges, and the several mountain-chains that run parallel with the side, and the volcanoes that overtop Mouna-Rea, which rise 5,000 yards above the level of the sea. Besides other things the nets brought up were several flabellariæ and graceful polypi, that are peculiar to that part of the ocean. The direction of the Nautilus was still to the southeast. It crossed the equator December 1, in 142° longitude; and on the 4th of the same month, after crossing rapidly and without anything particular occurring, we sighted the Marquesas group. I saw, three miles off, at 8° 57' latitude south, and 139° 32' west longitude, Martin's peak in Nouka-Hiva, the largest of the group that belongs to France. I only saw the woody mountains against the horizon, because Captain Nemo did not wish to bring the ship to the wind. There the nets brought up beautiful specimens of fish: choryphenes, with azure fins and tails like gold, the flesh of which is unrivaled; hologymnoses, nearly destitute of scales, but of exquisite flavor; ostorhyncs, with bony jaws, and yellow-tinged thasards, as good as bonitos; all fish that would be of use to us. After leaving these charming islands protected by the French flag, from the 4th to the 11 th of December the *Nautilus* sailed over about 2,000 miles. This navigation was remarkable for the meeting with an immense shoal of calmars, near neighbors to the cuttle. The French fishermen call them *hornets;* they belong to the cephalopod class, and to the dibranchial family, that comprehends the cuttles and the argonauts. These animals were particularly studied by students of antiquity, and they furnished numerous metaphors to the popular orators, as well as excellent dishes for the tables of the rich citizens, if one can believe Athenæus, a Greek doctor, who lived before Galen.[27] It was during the night of the 9th or 10th of December that the *Nautilus* came across this shoal of mollusks, that are peculiarly nocturnal. One could count them by millions. They emigrate from the temperate to the warmer zones, following the track of herrings and sardines. We watched them through the thick crystal panes, swimming down the wind with great rapidity, moving by means of their locomotive tube, pursuing fish and mollusks, eating the little ones, eaten by the big ones, and tossing about in indescribable confusion the ten arms that nature has placed on their heads like a crest of pneumatic serpents. The *Nautilus,* in spite of its speed, sailed for several hours in the midst of these animals, and its nets brought in an

enormous quantity, among which I recognized the nine species that D'Orbigny[28] classed for the Pacific. One saw, while crossing, that the sea displays the most wonderful sights. They were in endless variety. The scene changed continually, and we were called upon not only to contemplate the works of the Creator in the midst of the liquid element, but to penetrate the awful mysteries of the ocean.

During the daytime of the 11th of December, I was busy reading in the large drawing-room. Ned Land and Conseil watched the luminous water through the half-open panels. The *Nautilus* was immovable. While its reservoirs were filled, it kept at a depth of 1,000 yards, a region rarely visited in the ocean, and in which large fish were seldom seen.

I was then reading a charming book by Jean Macé,[ap] "The Slaves of the Stomach," and I was learning some valuable lessons from it, when Conseil interrupted me.

"Will master come here a moment?" he said in a curious voice.

"What is the matter, Conseil?"

"I want master to look."

I rose, went and leaned on my elbows before the panes, and watched.

In a full electric light, an enormous black mass, quite immovable, was suspended in the midst of the waters. I watched it attentively, seeking to find out the nature of this gigantic cetacean. But a sudden thought crossed my mind. "A vessel!" I said, half aloud.

"Yes," replied the Canadian, "a disabled ship that has sunk perpendicularly."

Ned Land was right; we were close to a vessel of which the tattered shrouds still hung from their chains. The keel seemed to be in good order, and it had been wrecked at most some few hours. Three stumps of masts, broken off about two feet above the bridge, showed that the vessel had had to sacrifice its masts. But, lying on its side, it had filled, and it was heeling over to port. This skeleton of what it had once been was a sad spectacle as it lay lost under the waves; but sadder still was the sight of the bridge, where some corpses, bound with ropes, were still lying. I counted five—four men, one of whom was standing at the helm, and a woman standing by the poop holding an infant in her arms. She was quite young. I could distinguish her features, which the water had not decomposed, by the brilliant light from the *Nautilus*. In one despairing effort, she had raised her infant above her head, poor little thing, whose arms encircled its mother's neck. The attitude of the four sailors was frightful, distorted as they were by their convulsive movements, while making a last effort to free themselves from the cords that bound them to the vessel. The steersman alone, calm, with a grave, clear face, his gray hair glued to his forehead, and his hand clutching the wheel of the helm, seemed even then to be guiding the three broken masts through the depths of the ocean.

What a scene! We were dumb; our hearts beat fast before this shipwreck, taken as it were from life, and photographed in its last moments. And I saw already, coming toward it with hungry eyes, enormous sharks, attracted by the human flesh.

However, the Nautilus, turning, went round the submerged vessel, and in one instant I read on the stern—*The Florida, Sunder-land.*

Chapter XVIII

Vanikoro

THIS TERRIBLE SPECTACLE WAS the forerunner of the series of maritime catastrophes that the *Nautilus* was destined to meet with in its route. As long as it went through more frequented waters, we often saw the hulls of shipwrecked vessels that were rotting in the depths, and, deeper down, cannons, bullets, anchors, chains, and a thousand other iron materials eaten up by rust. However, on the 11 th of December, we sighted the Pomotou Islands, the old "dangerous group" of Bougainville,[29] that extend over a space of 500 leagues at E.S.E. to W.N.W., from the Island Ducie to that of Lazareff. This group covers an area of 370 square leagues, and it is formed of sixty groups of islands, among which the Gambier group is remarkable, over which France exercises sway. These are coral islands, slowly raised, but continuous, created by the daily work of polypi. Then this new island will be joined later on to the neighboring groups, and a fifth continent will stretch from New Zealand and New Caledonia, and from thence to the Marquesas.

One day, when I was suggesting this theory to Captain Nemo, he replied coldly:

"The earth does not want new continents, but new men."

Chance had conducted the *Nautilus* toward the island of Clermont-Tonnerre, one of the most curious of the group that was discovered in 1822 by Captain Bell of the *Minerva*. I could study now the madreporal system, to which are due the islands in this ocean.

Madrepores (which must not be mistaken for corals) have a tissue lined with a calcareous crust, and the modifications of its structure have induced M. Milne-Edwards, my worthy master, to class them into five sections. The animalculæ that the marine polypus secretes live by millions at the bottom of their cells. Their calcareous deposits become rocks, reefs, and large and small islands. Here they form a ring, surrounding a little inland lake, that communicates with the sea by means of gaps. There they make barriers of reefs like those on the coast of New Caledonia and the various Pomotou islands. In other places, like those at Reunion and at Maurice, they raise fringed reefs, high, straight walls, near which the depth of the ocean is considerable.

Some cable-lengths off the shores of the island of Clermont, I admired the gigantic work accomplished by these microscopical workers. These walls are

especially the work of those madrepores known as milleporas, porites, and astræas, These polypi are found particularly in the rough beds of the sea, near the surface; and consequently it is from the upper part that they begin their operations in which they bury themselves by degrees with the debris of the secretions that support them. Such is, at least, Darwin's theory, who thus explains the formation of the *atolls,*[30] a superior theory (to my mind) to that given of the foundation of the madreporical works, summits of mountains or volcanoes, that are submerged some feet below the level of the sea.

I could observe closely these curious walls, for perpendicularly they were more than 300 yards deep, and our electric sheets lighted up this calcareous matter brilliantly. Replying to a question Conseil asked me as to the time these colossal barriers took to be raised, I astonished him much by telling him that learned men reckoned it about the eighth of an inch in a hundred years.

Toward evening Clermont-Tonnerre was lost in the distance, and the route of the *Nautilus* was sensibly changed. After having crossed the Tropic of Capricorn in 135° longitude, it sailed W.N.W., making again for the tropical zone. Although the summer sun was very strong, we did not suffer from heat, for at fifteen or twenty fathoms below the surface the temperature did not rise above from ten to twelve degrees.

On December 15, we left to the east the bewitching group of the Societies and the graceful Tahiti, queen of the Pacific. I saw in the morning, some miles to the windward, the elevated summits of the island. These waters furnished our table with excellent fish, mackerel, bonitos, and albicores, and some varieties of a sea-serpent called munirophis.

On the 25th of December the *Nautilus* sailed into the midst of the New Hebrides, discovered by Quiros in 1606, and that Bougainville explored in 1768, and to which Cook gave its present name in 1773. This group is composed principally of nine large islands, that form a band of 120 leagues N.N.E. to S.S.W., between 15° and 20° south latitude, and 164° and 168° longitude. We passed tolerably near to the island of Aurou, that at noon looked like a mass of green woods surmounted by a peak of great height.

That day being Christmas Day, Ned Land seemed to regret sorely the non-celebration of "Christmas," the family *fête*[aq] of which Protestants are so fond. I had not seen Captain Nemo for a week when, on the morning of the 27th, he came into the large drawing-room, always seeming as if he had seen you five minutes before. I was busily tracing the route of the *Nautilus* on the planisphere. The captain came up to me, put his finger on one spot on the chart, and said this single word:

"Vanikoro."

The effect was magical! It was the name of the islands on which La Perouse had been lost![31] I rose suddenly.

"The *Nautilus* has brought us to Vanikoro?" I asked.

“Yes, professor,” said the captain.

“And I can visit the celebrated islands where the *Boussole* and the *Astrolabe* struck?”

“If you like, professor.”

“When shall we be there?”

“We are there now.”

Followed by Captain Nemo, I went up on to the platform, and greedily scanned the horizon.

To the N.E. two volcanic islands emerged, of unequal size, surrounded by a coral reef that measured forty miles in circumference.

We were close to Vanikoro, really the one to which Dumont d’Urville gave the name of Isle de la Récherché, and exactly facing the little harbor of Vanou, situated in 16° 4’ south latitude, and 164° 32’ east longitude. The earth seemed covered with verdure from the shore to the summits in the interior, that were crowned by Mount Kapogo, 476 feet high. The *Nautilus,* having passed the outer belt of rocks by a narrow strait, found itself among breakers where the sea was from thirty to forty fathoms deep. Under the verdant shade of some mangroves I perceived some savages, who appeared greatly surprised at our approach. In the long black body, moving between wind and water, did they not see some formidable cetacean that they regarded with suspicion?

Just then Captain Nemo asked me what I knew about the wreck of La Perouse.

“Only what everyone knows, captain,” I replied.

“And could you tell me what everyone knows about it?” he inquired ironically.

“Easily.”

I related to him all that the last works of Dumont d’Urville had made known—works from which the following is a brief account.

La Perouse, and his second, Captain de Langle, were sent by Louis XVI, in 1785, on a voyage of circumnavigation. They embarked in the corvettes the *Boussole* and the *Astrolabe,* neither of which were again heard of. In 1791 the French government, justly uneasy as to the fate of these two sloops, manned two large merchantmen, the *Récherché* and the *Esperance,* which left Brest the 28th of September, under the command of Bruni d’Entrecasteaux.

Two months after, they learned from Bowen, commander of the *Albemarle,* that the debris of shipwrecked vessels had been seen on the coasts of New Georgia. But D’Entrecasteaux, ignoring this communication—rather uncertain besides—directed his course toward the Admiralty Isles, mentioned in a report of Captain Hunter’s as being the place where La Perouse was wrecked.

They sought in vain. The *Esperance* and the *Récherché* passed before Vanikoro without stopping there, and in fact this voyage was most disastrous, as it cost D'Entrecasteaux his life, and those of two of his lieutenants, besides several of his crew.

Captain Dillon, a shrewd old Pacific sailor, was the first to find unmistakable traces of the wrecks. On the 15th of May,1824, his vessel, the *St. Patrick,* passed close to Tikopia, one of the New Hebrides. There a Lascar came alongside in a canoe, sold him the handle of a sword in silver, that bore the print of characters engraved on the hilt. The Lascar pretended that six years before, during a stay at Vanikoro, he had seen two Europeans that belonged to some vessels that had run aground on the reefs some years ago.

Dillon guessed that he meant La Perouse, whose disappearance had troubled the whole world. He tried to get on to Vanikoro, where according to the Lascar he would find numerous debris of the wreck, but winds and tide prevented him.

Dillon returned to Calcutta. There he interested the Asiatic Society and the Indian Company in his discovery. A vessel, to which was given the name of the *Récherché,* was put at his disposal, and he set out, January 23, 1827, accompanied by a French agent.

The *Récherché,* after touching at several points in the Pacific, cast anchor before Vanikoro, July 7, 1827, in this same harbor of Vanou where the *Nautilus* was at this time.

There it collected numerous relics of the wreck—iron utensils, anchors, pulley-strops, swivel-guns, an eighteen-pound shot, fragments of astronomical instruments, a piece of crown-work, and a bronze clock, bearing this inscription: *"Bazin m'a fait,"*[ar] the mark of the foundry of the arsenal at Brest about 1785. There could be no further doubt.

Dillon, having made all inquiries, stayed in the unlucky place till October. Then he quitted Vanikoro, and directed his course toward New Zealand; put into Calcutta, April 7, 1828, and returned to France, where he was warmly welcomed by Charles X.

But at the same time, without knowing Dillon's movements, Dumont d'Urville had already set out to find the scene of the wreck. And they had learned from a whaler that some medals and a cross of St. Louis had been found in the hands of some savages of Louisiade and New Caledonia. Dumont d'Urville, commander of the *Astrolabe,* had then sailed, and two months after Dillon had left Vanikoro, he put into Hobart Town. There he learned the results of Dillon's inquiries, and found that a certain James Hobbs, second lieutenant of the *Union,* of Calcutta, after landing on an island situated 8° 18' south latitude, and 156° 30' east longitude, had seen some iron bars and red stuffs used by the natives of these parts. Dumont d'Urville, much perplexed, and not knowing how to credit the reports of low-class journals, decided to follow Dillon's track.

On the 10th of February, 1828, the *Astrolabe* appeared off Tikopia, and D'Urville took as guide and interpreter a deserter found on the island; made his way to Vanikoro, sighted it on the 12th inst., lay among the reefs until the 14th, and not until the 20th did he cast anchor within the barrier in the harbor of Vanou.

On the 23d, several officers went round the island, and brought back some unimportant trifles. The natives, adopting a system of denials and evasions, refused to take them to the unlucky place. This ambiguous conduct led them to believe that the natives had ill-treated the castaways, and indeed they seemed to fear that Dumont d'Urville had come to avenge La Perouse and his unfortunate crew.

However, on the 26th, appeased by some presents, and understanding that they had no reprisals to fear, they led M. Jacquireot to the scene of the wreck.

There, in three or four fathoms of water, between the reefs of Pacou and Vanou, lay anchors, cannons, pigs of lead and iron, imbedded in the limy concretions. The large boat and the whaler belonging to the *Astrolabe* were sent to this place, and, not without some difficulty, their crews hauled up an anchor weighing 1,800 pounds, a brass gun, some pigs of iron, and two copper swivel-guns.

Dumont d'Urville, questioning the natives, learned, too, that La Perouse, after losing both his vessels on the reefs of this island, had constructed a smaller boat, only to be lost a second time. Where? No one knew.

But the French government, fearing that Dumont d'Urville was not acquainted with Dillon's movements, had sent the sloop *Bayonnaise,* commanded by Legoarant de Tromelin, to Vanikoro, which had been stationed on the west coast of America. The *Bayonnaise* cast her anchor before Vanikoro some months after the departure of the *Astrolabe,* but found no new document; but stated that the savages had respected the monument to La Perouse. That is the substance of what I told to Captain Nemo.

"So," he said, "no one knows now where the third vessel perished that was constructed by the castaways on the island of Vanikoro?"

"No one knows."

Captain Nemo said nothing, but signed to me to follow him into the large saloon. The *Nautilus* sank several yards below the waves, and the panels were opened.

I hastened to the aperture, and under the crustations of coral, covered with fungi, syphonules, alcyons, madrepores, through myriads of charming fish—girelles, glyphisidri, pompherides, diacopes, and holocentres—I recognized certain debris that the drags had not been able to tear up: iron stirrups, anchors, cannons, bullets, capstan-fittings, the stem of a ship—all objects clearly proving the wreck of some vessel, and now carpeted with living flowers.

While I was looking on this desolate scene, Captain Nemo said, in a sad voice:

“Commander La Perouse set out December 7, 1785, with his vessels *La Boussole* and the *Astrolabe.* He first cast anchor at Botany Bay, visited the Friendly Isles, New Caledonia, then directed his course toward Santa Cruz, and put into Namouka, one of the Hapaï group. Then his vessel struck on the unknown reefs of Vanikoro. The *Boussole,* which went first, ran aground on the southerly coast. The Astrolabe went to its help, and ran aground too. The first vessel was destroyed almost immediately. The second, stranded under the wind, resisted some days. The natives made the castaways welcome. They installed themselves in the island, and constructed a smaller boat with the debris of the two large ones. Some sailors stayed willingly at Vanikoro; the others, weak and ill, set out with La Perouse. They directed their course toward the Solomon Isles, and there perished, with everything, on the westerly coast of the chief island of the group, between Capes Deception and Satisfaction.”

“How do you know that?”

“By this, that I found on the spot where was the last wreck.”

Captain Nemo showed me a tin-plate box, stamped with the French arms, and corroded by the salt water. He opened it, and I saw a bundle of papers, yellow but still readable.

They were the instructions of the naval minister to Commander La Perouse, annotated in the margin in Louis XVI’s handwriting.

“Ah! it is a fine death for a sailor!” said Captain Nemo, at last. “A coral tomb makes a quiet grave; and I trust that I and my comrades will find no other.”

Chapter XIX

Torres Straits

DURING THE NIGHT OF the 27th or 28th of December, the *Nautilus* left the shores of Vanikoro with great speed. Her course was south-westerly, and in three days she had gone over the 750 leagues that separated it from La Perouse's group and the southeast point of Papua.

Early on the 1st of January, 1863, Conseil joined me on the platform.

"Master, will you permit me to wish you a happy new year?"

"What! Conseil; exactly as if I was at Paris in my study at the Jardin des Plantes? Well, I accept your good wishes, and thank you for them. Only, I will ask you what you mean by a 'happy new year,' under our circumstances? Do you mean the year that will bring us to the end of our imprisonment, or the year that sees us continue this strange voyage?"

"Really, I do not know how to answer, master. We are sure to see curious things, and for the last two months we have not had time for *ennui.* The last marvel is always the most astonishing; and if we continue this progression, I do not know how it will end. It is my opinion that we shall never again see the like. I think, then, with no offense to master, that a happy year would be one in which we could see everything."

On January 2, we had made 11,340 miles, or 5,250 French leagues, since our starting-point in the Japan seas. Before the ship's head stretched the dangerous shores of the coral sea, on the northeast coast of Australia. Our boat lay along some miles from the redoubtable bank on which Cook's vessel was lost, June 10, 1770. The boat in which Cook was struck on a rock, and if it did not sink, it was owing to a piece of the coral that was broken by the shock, and fixed itself in the broken keel.

I had wished to visit the reef, 360 leagues long, against which the sea, always rough, broke with great violence, with a noise like thunder. But just then the inclined planes drew the *Nautilus* down to a great depth, and I could see nothing of the high coral walls. I had to content myself with the different specimens of fish brought up by the nets. I remarked, among others, some germons, a species of mackerel as large as a tunny, with bluish sides, and striped with transverse bands, that disappear with the animal's life. These fish followed us in shoals, and furnished us with very delicate food. We took also a large number of giltheads, about one and a half inches long, tasting like dorys;

and flying pyrapeds like submarine swallows, which, in dark nights, light alternately the air and water with their phosphorescent light. Among the mollusks and zoöphytes, I found in the meshes of the net several species of alcyonarians, echini, hammers, spurs, dials, cerites, and hyalleæ. The flora was represented by beautiful floating seaweeds, laminariæ, and macrocystes, impregnated with the mucilage that transudes through their pores; and among which I gathered an admirable *Nemastoma Geliniarois,* that was classed among the natural curiosities of the museum.

Two days after crossing the coral sea, January 4, we sighted the Papuan coasts. On this occasion, Captain Nemo informed me that his intention was to get into the Indian Ocean by the Strait of Torres. [as] His communication ended there.

The Torres Straits are nearly thirty-four leagues wide; but they are obstructed by an innumerable quantity of islands, islets, breakers, and rocks, that make its navigation almost impracticable, so that Captain Nemo took all needful precautions to cross them. The *Nautilus,* floating betwixt wind and water, went at a moderate pace. Her screw, like a cetacean's tail, beat the waves slowly.

Profiting by this, I and my two companions went up on to the deserted platform. Before us was the steersman's cage, and I expected that Captain Nemo was there directing the course of the *Nautilus.* I had before me the excellent charts of the Strait of Torres, made out by the hydrographical engineer Vincendon Dumoulin. These and Captain King's are the best charts that clear the intricacies of this strait, and I consulted them attentively. Round the *Nautilus* the sea dashed furiously. The course of the waves, that went from southeast to northwest at the rate of two and a half miles, broke on the coral that showed itself here and there.

"This is a bad sea!" remarked Ned Land.

"Detestable indeed, and one that does not suit a boat like the *Nautilus.*"

"The captain must be very sure of his route, for I see there pieces of coral that would do for its keel if it only touched them slightly."

Indeed the situation was dangerous, but the *Nautilus* seemed to slide like magic off these rocks. It did not follow the routes of the *Astrolabe* and the *Boussole* exactly, for they proved fatal to Dumont d'Urville. It bore more northward, coasted the island of Murray, and came back to the southwest toward Cumberland Passage. I thought it was going to pass it by, when, going back to northwest, it went through a large quantity of islands and islets little known, toward the Island Sound and Canal Mauvais.

I wondered if Captain Nemo, foolishly imprudent, would steer his vessel into that pass where Dumont d'Urville's two corvettes touched; when, swerving again, and cutting straight through to the west, he steered for the island of Gilboa.

It was then three in the afternoon. The tide began to recede, being quite full. The *Nautilus* approached the island, that I still saw, with its remarkable border of screw-pines. He stood off it at about two miles distant. Suddenly a shock overthrew me. The *Nautilus* just touched a rock, and stayed immovable, laying lightly to port side.

When I rose, I perceived Captain Nemo and his lieutenant on the platform. They were examining the situation of the vessel, and exchanging words in their incomprehensible dialect.

She was situated thus: two miles, on the starboard side, appeared Gilboa, stretching from north to west like an immense arm; toward the south and east some coral showed itself, left by the ebb. We had run aground, and in one of those seas where the tides are middling—a sorry matter for the floating of the *Nautilus.* However, the vessel had not suffered, for her keel was solidly joined. But if she could neither glide off nor move, she ran the risk of being forever fastened to these rocks, and then Captain Nemo's submarine vessel would be done for.

I was reflecting thus, when the captain, cool and calm, always master of himself, approached me.

"An accident?" I asked.

"No; an incident."

"But an incident that will oblige you perhaps to become an inhabitant of this land from which you flee?"

Captain Nemo looked at me curiously, and made a negative gesture, as much as to say that nothing would force him to set foot on *terra firma* again. Then he said:

"Besides, M. Aronnax, the *Nautilus* is not lost; it will carry you yet into the midst of the marvels of the ocean. Our voyage is only begun, and I do not wish to be deprived so soon of the honor of your company."

"However, Captain Nemo," I replied, without noticing the ironical turn of his phrase, "the *Nautilus* ran aground in open sea. Now the tides are not strong in the Pacific; and if you cannot lighten the *Nautilus,* I do not see how it will be reinflated."

"The tides are not strong in the Pacific: you are right there, professor; but in Torres Straits, one finds still a difference of a yard and a half between the level of high and low seas. To-day is January 4, and in five days the moon will be full. Now, I shall be very much astonished if that complaisant satellite does not raise these masses of water sufficiently, and render me a service that I should be indebted to her for."

Having said this Captain Nemo, followed by his lieutenant, re-descended to the interior of the *Nautilus.* As to the vessel, it moved not, and was immovable, as if the coralline polypi had already walled it up with their

indestructible cement.

“Well, sir?” said Ned Land, who came up to me after the departure of the captain.

“Well, friend Ned, we will wait patiently for the tide on the 9th instant; for it appears that the moon will have the goodness to put it off again.”

“Really?”

“Really.”

“And this captain is not going to cast anchor at all, since the tide will suffice?” said Conseil simply.

The Canadian looked at Conseil, then shrugged his shoulders.

“Sir, you may believe me when I tell you that this piece of iron will navigate neither on nor under the sea again; it is only fit to be sold for its weight. I think, therefore, that the time has come to part company with Captain Nemo.”

“Friend Ned, I do not despair of this stout *Nautilus,* as you do; and in four days we shall know what to hold to on the Pacific tides. Besides, flight might be possible if we were in sight of the English or Provençal coasts; but on the Papuan shores, it is another thing; and it will be time enough to come to that extremity if the *Nautilus* does not recover itself again, which I look upon as a grave event.”

“But do they know, at least, how to act circumspectly? There is an island; on that island there are trees; under those trees, terrestrial animals, bearers of cutlets and roast-beef, to which I would willingly give a trial.”

“In this, friend Ned is right,” said Conseil, “and I agree with him. Could not master obtain permission from his friend Captain Nemo to put us on land, if only so as not to lose the habit of treading on the solid parts of our planet?”

“I can ask him, but he will refuse.”

“Will master risk it?” asked Conseil. “And we shall know how to rely upon the captain’s amiability.”

To my great surprise Captain Nemo gave me the permission I asked for, and he gave it very agreeably, without even exacting from me a promise to return to the vessel; but flight across New Guinea might be very perilous, and I should not have counseled Ned Land to attempt it. Better to be a prisoner on board the *Nautilus* than to fall into the hands of the natives.

At eight o’clock, armed with guns and hatchets, we got off the *Nautilus.* The sea was pretty calm; a slight breeze blew on land. Conseil and I rowing, we sped along quickly, and Ned steered in the straight passage that the breakers left between them. The boat was well handled, and moved rapidly.

Ned Land could not restrain his joy. He was like a prisoner that had escaped from prison, and knew not that it was necessary to reenter it.

“Meat! We are going to eat some meat; and what meat!” he replied. “Real game! No, bread, indeed. I do not say that fish is not good; we must not abuse it; but a piece of fresh venison grilled on live coals will agreeably vary our ordinary course.”

“Gourmand!” said Conseil. “He makes my mouth water.”

“It remains to be seen,” I said, “if these forests are full of game, and if the game is not such as will hunt the hunter himself.”

“Well said, M. Aronnax,” replied the Canadian, whose teeth seemed sharpened like the edge of a hatchet; “but I will eat tiger—loin of tiger—if there is no other quadruped on this island.”

“Friend Ned is uneasy about it,” said Conseil.

“Whatever it may be,” continued Ned Land, “every animal with four paws without feathers, or with two paws with feathers, will be saluted by my first shot.”

“Very well! Master Land’s imprudences are beginning.”

“Never fear, M. Aronnax,” replied the Canadian, “I do not want twenty-five minutes to offer you a dish of my sort.”

At half-past eight the *Nautilus’* boat ran softly aground, on a heavy sand, after having happily passed the coral reef that surrounds the island of Gilboa.

Chapter XX

A Few Days on Land

I WAS MUCH IMPRESSED on touching land. Ned Land tried the soil with his feet, as if to take possession of it. However, it was only two months before that we had become, according to Captain Nemo, "passengers on board the *Nautilus,"* but, in reality, prisoners of its commander.

In a few minutes we were within musket-shot of the coast. The soil was almost entirely madreporical, but certain beds of dried-up torrents strewn with debris of granite showed that this island was of the primary formation. The whole horizon was hidden behind a beautiful curtain of forests. Enormous trees, the trunks of which attained a height of 200 feet, were tied to each other by garlands of bindweed, real natural hammocks, which a light breeze rocked. They were mimosas, ficuses, casuarinæ, teks, hibisci, and palm trees, mingled together in profusion; and under the shelter of their verdant vault grew orchids, leguminous plants, and ferns.

But without noticing all these beautiful specimens of Papuan flora, the Canadian abandoned the agreeable for the useful. He discovered a cocoa-tree, beat down some of the fruit, broke them, and we drank the milk and ate the nut with a satisfaction that protested against the ordinary food on the *Nautilus.*

"Excellent!" said Ned Land.

"Exquisite!" replied Conseil.

"And I do not think," said the Canadian, "that he would object to our introducing a cargo of cocoanuts on board."

"I do not think he would, but he would not taste them."

"So much the worse for him," said Conseil.

"And so much the better for us," replied Ned Land. "There will be more for us."

"One word only, Master Land," I said to the harpooner, who was beginning to ravage another cocoanut-tree. "Cocoanuts are good things, but before filling the canoe with them, it would be wise to reconnoiter and see if the island does not produce some substance not less useful. Fresh vegetables would be welcome on board the *Nautilus."*

“Master is right,” replied Conseil; “and I propose to reserve three places in our vessel: one for fruits, the other for vegetables, and the third for the venison, of which I have not yet seen the smallest specimen.”

“Conseil, we must not despair,” said the Canadian.

“Let us continue,” I returned, “and lie in wait. Although the island seems uninhabited, it might still contain some individuals that would be less hard than we on the nature of game.”

“Ho! ho!” said Ned Land, moving his jaws significantly.

“Well, Ned!” cried Conseil.

“My word!” returned the Canadian, “I begin to understand the charms of anthropophagy.”

“Ned! Ned! What are you saying? You, a man-eater? I should not feel safe with you, especially as I share your cabin. I might perhaps wake one day to find myself half-devoured.”

“Friend Conseil, I like you much, but not enough to eat you unnecessarily.”

“I would not trust you,” replied Conseil. “But enough. We must absolutely bring down some game to satisfy this cannibal, or else, one of these fine mornings, master will find only pieces of his servant to serve him.”

While we were talking thus, we were penetrating the somber arches of the forest, and for two hours we surveyed it in all directions.

Chance rewarded our search for eatable vegetables, and one of the most useful products of the tropical zones furnished us with precious food that we missed on board. I would speak of the bread-fruit tree, very abundant in the island of Gilboa; and I remarked chiefly the variety destitute of seeds, which bears in Malaya the name of “rima.”

Ned Land knew these fruits well. He had already eaten many during his numerous voyages, and he knew how to prepare the eatable substance. Moreover, the sight of them excited him, and he could contain himself no longer.

“Master,” he said, “I shall die if I do not taste a little of this bread-fruit pie.”

“Taste it, friend Ned, taste it as you want. We are here to make experiments—make them.”

“It won’t take long,” said the Canadian.

And provided with a lentil, he lighted a fire of dead wood, that crackled joyously. During this time, Conseil and I chose the best fruits of the artocarpus. Some had not then attained a sufficient degree of maturity, and

their thick skin covered a white but rather fibrous pulp. Others, the greater number yellow and gelatinous, waited only to be picked.

These fruits inclose no kernel. Conseil brought a dozen to Ned Land, who placed them on a coal fire, after having cut them in thick slices, and while doing this repeating:

“You will see, master, how good this bread is. More so when one has been deprived of it so long. It is not even bread,” added he, “but a delicate pastry. You have eaten none, master?”

“No, Ned.”

“Very well, prepare yourself for a juicy thing. If you do not come for more, I am no longer the king of harpooners.”

After some minutes, the part of the fruits that was exposed to the fire was completely roasted. The interior looked like a white pastry, a sort of soft crumb, the flavor of which was like that of an artichoke.

It must be confessed this bread was excellent, and I ate of it with great relish.

“What time is it now?” asked the Canadian.

“Two o’clock at least,” replied Conseil.

“How time flies on firm ground!” sighed Ned Land.

“Let us be off,” replied Conseil.

We returned through the forest, and completed our collection by a raid upon the cabbage-palms, that we gathered from the tops of the trees, little beans that I recognized as the “abrou” of the Malays, and yams of a superior quality.

We were loaded when we reached the boat. But Ned Land did not find his provision sufficient. Fate, however, favored us. Just as we were pushing off, he perceived several trees, from twenty-five to thirty feet high, a species of palm tree. These trees, as valuable as the artocarpus, justly are reckoned among the most useful products of Malaya.

At last, at five o’clock in the evening, loaded with our riches, we quitted the shore, and half an hour after we hailed the *Nautilus*. No one appeared on our arrival. The enormous iron-plated cylinder seemed deserted. The provisions embarked, I descended to my chamber, and after supper slept soundly.

The next day, January 6, nothing new on board. Not a sound inside, not a sign of life. The boat rested along the edge, in the same place in which we had left it. We resolved to return to the island. Ned Land hoped to be more fortunate than on the day before with regard to the hunt, and wished to visit another part of the forest.

At dawn we set off. The boat, carried on by the waves that flowed to shore, reached the island in a few minutes.

We landed, and thinking that it was better to give in to the Canadian, we followed Ned Land, whose long limbs threatened to distance us. He wound up the coast toward the west; then, fording some torrents, he gained the high plain that was bordered with admirable forests. Some kingfishers were rambling along the water-courses, but they would not let themselves be approached. Their circumspection proved to me that these birds knew what to expect from bipeds of our species, and I concluded that, if the island was not inhabited, at least human beings occasionally frequented it.

After crossing a rather large prairie, we arrived at the skirts of a little wood that was enlivened by the songs and flight of a large number of birds.

“There are only birds!” said Conseil.

“But they are eatable,” replied the harpooner.

“I do not agree with you, friend Ned, for I see only parrots there.”

“Friend Conseil,” said Ned gravely, “the parrot is like pheasant to those who have nothing else.”

“And” I added, “this bird, suitably prepared, is worth knife and fork.”

Indeed, under the thick foliage of this wood, a world of parrots were flying from branch to branch, only needing a careful education to speak the human language. For the moment, they were chattering with parrots of all colors, and grave cockatoos, who seemed to meditate upon some philosophical problem, while brilliant red lories passed like a piece of bunting carried away by the breeze; Papuans, with the finest azure colors, and in all a variety of winged things most charming to behold, but few eatable.

However, a bird peculiar to these lands, and which has never passed the limits of the Arrow and Papuan islands, was wanting in this collection. But fortune reserved it for me before long.

After passing through a moderately thick copse, we found a plain obstructed with bushes. I saw then those magnificent birds, the disposition of whose long feathers obliges them to fly against the wind. Their undulating flight, graceful aerial curves, and the shading of their colors, attracted and charmed one’s looks. I had no trouble in recognizing them.

“Birds of paradise!” I exclaimed.

The Malays, who carry on a great trade in these birds with the Chinese, have several means that we could not employ for taking them. Sometimes they put snares at the top of high trees that the birds of paradise prefer to frequent. Sometimes they catch them with a viscous birdlime that paralyzes their movements. They even go so far as to poison the fountain that the birds generally drink from. But we were obliged to fire at them during flight, which

gave us few chances to bring them down; and indeed, we vainly exhausted one-half of our ammunition.

About eleven o'clock in the morning, the first range of mountains that form the center of the island was traversed, and we had killed nothing. Hunger drove us on. The hunters had relied on the products of the chase, and they were wrong. Happily Conseil, to his great surprise, made a double shot and secured breakfast. He brought down a white pigeon and a wood-pigeon, which, cleverly plucked and suspended from a skewer, were roasted before a red fire of dead wood. While those interesting birds were cooking, Ned prepared the fruit of the artocarpus. Then the wood-pigeons were devoured to the bones, and declared excellent. The nutmeg, with which they are in the habit of stuffing their crops, flavors their flesh and renders it delicious eating.

"Now, Ned, what do you miss now?"

"Some four-footed game, M. Aronnax. All these pigeons are only side-dishes and trifles; and until I have killed an animal with cutlets, I shall not be content."

"Nor I, Ned, if I do not catch a bird of paradise."

"Let us continue hunting," replied Conseil. "Let us go toward the sea. We have arrived at the first declivities of the mountains, and I think we had better regain the region of forests."

That was sensible advice, and was followed out. After walking for one hour, we had attained a forest of sago trees. Some inoffensive serpents glided away from us. The birds of paradise fled at our approach, and truly I despaired of getting near one, when Conseil, who was walking in front, suddenly bent down, uttered a triumphal cry, and came back to me bringing a magnificent specimen.

"Ah! bravo, Conseil!"

"Master is very good."

"No, my boy; you have made an excellent stroke. Take one of these living birds, and carry it in your hand."

"If master will examine it, he will see that I have not deserved great merit."

"Why, Conseil?"

"Because this bird is as drunk as a quail."

"Drunk!"

"Yes, sir; drunk with the nutmegs that it devoured under the nutmeg-tree under which I found it. See, friend Ned, see the monstrous effects of intemperance!"

“By Jove!” exclaimed the Canadian. “Because I have drunk gin for two months, you must needs reproach me!”

However, I examined the curious bird. Conseil was right. The bird, drunk with the juice, was quite powerless. It could not fly; it could hardly walk.

This bird belonged to the most beautiful of the eight species that are found in Papua and in the neighboring islands. It was the “large emerald bird, the most rare kind.” It measured three feet in length. Its head was comparatively small, its eyes placed near the opening of the beak, and also small. But the shades of color were beautiful, having a yellow beak, brown feet and claws, nut-colored wings with purple tips, pale yellow at the back of the neck and head, and emerald color at the throat, chestnut on the breast and belly. Two horned downy nets rose from below the tail, that prolonged the long light feathers of admirable fineness, and they completed the whole of this marvelous bird, that the natives have poetically named the “bird of the sun.”

But if my wishes were satisfied by the possession of the bird of paradise, the Canadian’s were not yet. Happily about two o’clock Ned Land brought down a magnificent hog, from the brood of those the natives call “barioutang.” The animal came in time for us to procure real quadruped meat, and he was well received. Ned Land was very proud of his shot. The hog, hit by the electric ball, fell stone dead. The Canadian skinned and cleaned it properly, after having taken half a dozen cutlets, destined to furnish us with a grilled repast in the evening. Then the hunt was resumed, which was still more marked by Ned and Conseil’s exploits.

Indeed, the two friends, beating the bushes, roused a herd of kangaroos, that fled and bounded along on their elastic paws. But these animals did not take flight so rapidly but what the electric capsule could stop their course.

“Ah, professor!” cried Ned Land, who was carried away by the delights of the chase. “What excellent game! and stewed too! What a supply for the *Nautilus!* two! three! five down! And to think that we shall eat that flesh, and that the idiots on board shall not have a crumb!”

I think that, in the excess of his joy, the Canadian, if he had not talked so much, would have killed them all. But he contented himself with a single dozen of these interesting marsupians. These animals were small. They were a species of those “kangaroo rabbits” that live habitually in the hollows of trees, and whose speed is extreme; but they are moderately fat, and furnish, at least, estimable food. We were very satisfied with the results of the hunt. Happy Ned proposed to return to this enchanting island the next day, for he wished to depopulate it of all the eatable quadrupeds. But he reckoned without his host.

At six o’clock in the evening we had regained the shore; our boat was moored to the usual place. The *Nautilus,* like a long rock, emerged from the waves two miles from the beach. Ned Land, without waiting, occupied himself about the important dinner business. He understood all about cooking well. The “bari-outang,” grilled on the coals, soon scented the air with a delicious

odor.

Indeed, the dinner was excellent. Two wood-pigeons completed this extraordinary *menu.* The sago pasty, the artocarpus bread, some mangoes, half a dozen pineapples, and the liquor fermented from some cocoanuts, overjoyed us. I even think that my worthy companions' ideas had not all the plainness desirable.

"Suppose we do not return to the *Nautilus* this evening?" said Conseil.

"Suppose we never return?" added Ned Land.

Just then a stone fell at our feet, and cut short the harpooner's proposition.

Chapter XXI

Captain Nemo's Thunderbolt

WE LOOKED AT THE edge of the forest without rising, my hand stopping in the action of putting it to my mouth, Ned Land's completing its office.

"Stones do not fall from the sky," remarked Conseil, "or they would merit the name of aërolites."

A second stone, carefully aimed, that made a savory pigeon's leg fall from Conseil's hand, gave still more weight to his observation. We all three arose, shouldered our guns, and were ready to reply to any attack.

"Are they apes?" cried Ned Land.

"Very nearly—they are savages."

"To the boat!" I said, hurrying to the sea.

It was indeed necessary to beat a retreat, for about twenty natives, armed with bows and slings, appeared on the skirts of a copse that masked the horizon to the right, hardly a hundred steps from us.

Our boat was moored about sixty feet from us. The savages approached us, not running, but making hostile demonstrations. Stones and arrows fell thickly.

Ned Land had not wished to leave his provisions; and, in spite of his imminent danger, his pig on one side, and kangaroos on the other, he went tolerably fast. In two minutes we were on the shore. To load the boat with provisions and arms, to push it out to sea, and ship the oars, was the work of an instant. We had not gone two cables' lengths when a hundred savages, howling and gesticulating, entered the water up to their waists. I watched to see if their apparition would attract some men from the *Nautilus* on to the platform. But no. The enormous machine, lying off, was absolutely deserted.

Twenty minutes later we were on board. The panels were open. After making the boat fast, we entered into the interior of the *Nautilus.*

I descended to the drawing-room, from whence I heard some chords. Captain Nemo was there, bending over his organ, and plunged in a musical ecstasy.

“Captain!”

He did not hear me.

“Captain!” I said again, touching his hand.

He shuddered, and, turning round, said: “Ah! it is you, professor? Well, have you had a good hunt? Have you botanized successfully?”

“Yes, captain; but we have unfortunately brought a troop of bipeds, whose vicinity troubles me.”

“What bipeds?”

“Savages.”

“Savages!” he echoed ironically. “So you are astonished, professor, at having set foot on a strange land and finding savages? Savages! Where are there not any? Besides, are they worse than others, these whom you call savages?”

“But, captain——”

“How many have you counted?”

“A hundred at least.”

“M. Aronnax,” replied Captain Nemo, placing his fingers on the organ stops, “when all the natives of Papua are assembled on this shore, the *Nautilus* will have nothing to fear from their attacks.”

The captain’s fingers were then running over the keys of the instrument, and I remarked that he touched only the black keys, which gave to his melodies an essentially Scotch character. Soon he had forgotten my presence, and had plunged into a reverie that I did not disturb. I went up again on to the platform—night had already fallen; for, in this low latitude, the sun sets rapidly and without twilight. I could only see the island indistinctly; but the numerous fires lighted on the beach showed that the natives did not think of leaving it. I was alone for several hours, sometimes thinking of the natives—but without any dread of them, for the imperturbable confidence of the captain was catching—sometimes forgetting them to admire the splendors of the night in the tropics. My remembrances went to France, in the train of those zodiacal stars that would shine in some hours’ time. The moon shone in the midst of the constellations of the zenith.

The night slipped away without any mischance, the islanders frightened, no doubt, at the sight of a monster aground in the bay. The panels were open, and would have offered an easy access to the interior of the *Nautilus*.

At six o’clock in the morning of the 8th of January, I went up on to the platform. The dawn was breaking. The island soon showed itself through the dissipating fogs—first the shore, then the summits.

The natives were there, more numerous than on the day before—500 or 600 perhaps—some of them, profiting by the low water, had come on to the coral, at less than two cables' lengths from the *Nautilus.* I distinguished them easily; they were true Papuans, with athletic figures; men of good race, large high foreheads—large, but not broad, and flat—and white teeth. Their woolly hair, with a reddish tinge, showed off on their black, shining bodies like those of the Nubians. From the lobes of their ears, cut and distended, hung chaplets of bones. Most of these savages were naked. Among them I remarked some women dressed from the hips to the knees in quite a crinoline of herbs, that sustained a vegetable waistband. Some chiefs had ornamented their necks with a crescent and collars of glass beads, red and white; nearly all were armed with bows, arrows, and shields, and carried on their shoulders a sort of net containing those round stones which they cast from their slings with great skill. One of these chiefs, rather near to the *Nautilus,* examined it attentively. He was, perhaps, a "mado" of high rank, for he was draped in a mat of banana leaves notched round the edges, and set off with brilliant colors.

I could easily have knocked down this native, who was within a short length; but I thought that it was better to wait for real hostile demonstrations. Between Europeans and savages, it is proper for the Europeans to parry sharply, not to attack.

During low water the natives roamed about near the *Nautilus,* but were not troublesome; I heard them frequently repeat the word "Assai," and by their gestures I understood that they invited me to go on land, an invitation that I declined.

So that, on that day, the boat did not push off, to the great displeasure of Master Land, who could not complete his provisions.

This adroit Canadian employed his time in preparing the viands and meat that he had brought off the island. As for the savages, they returned to the shore about eleven o'clock in the morning, as soon as the coral tops began to disappear under the rising tide; but I saw their numbers had increased considerably on the shore. Probably they came from the neighboring islands, or very likely from Papua. However, I had not seen a single native canoe. Having nothing better to do, I thought of dragging these beautiful limpid waters, under which I saw a profusion of shells, zoöphytes, and marine plants. Moreover, it was the last day that the *Nautilus* would pass in these parts, if it float in open sea the next day, according to Captain Nemo's promise.

I therefore called Conseil, who brought me a little light drag, very like those for the oyster fishery. Now to work! For two hours we fished unceasingly, but without bringing up any rarities. The drag was filled with midasears, harps, melames, and particularly the most beautiful hammers I have ever seen. We also brought up some holothurias, pearl oysters, and a dozen little turtles, that were reserved for the pantry on board.

But just when I expected it least, I put my hand on a wonder, I might say a natural deformity, very rarely met with. Conseil was just dragging, and his net

came up filled with divers ordinary shells, when, all at once, he saw me plunge my arm quickly into the net, to draw out a shell, and heard me utter a conchological cry, that is to say, the most piercing cry that human throat can utter.

"What is the matter, sir?" he asked, in surprise. "Has master been bitten?"

"No, my boy, but I would willingly have given a finger for my discovery."

"What discovery?"

"This shell," I said, holding up the object of my triumph.

"It is simply an olive porphyry, genus olive, order of the pectinibranchidæ, class of gasteropods, sub-class of molluska."

"Yes, Conseil; but instead of being rolled from right to left, this olive turns from left to right."

"Is it possible?"

"Yes, my boy; it is a left shell."

Shells are all right-handed, with rare exceptions; and when by chance their spiral is left, amateurs are ready to pay their weight in gold.

Conseil and I were absorbed in the contemplation of our treasure, and I was promising myself to enrich the museum with it, when a stone, unfortunately thrown by a native, struck against and broke the precious object in Conseil's hand. I uttered a cry of despair! Conseil took up his gun, and aimed at a savage who was poising his sling at ten yards from him. I would have stopped him, but his blow took effect, and broke the bracelet of amulets which encircled the arm of the savage.

"Conseil!" cried I; "Conseil!"

"Well, sir! do you not see that the cannibal has commenced the attack?"

"A shell is not worth the life of a man," said I.

"Ah! the scoundrel!" cried Conseil; "I would rather he had broken my shoulder!"

Conseil was in earnest, but I was not of his opinion. However, the situation had changed some minutes before, and we had not perceived. A score of canoes surrounded the *Nautilus.* These canoes, scooped out of the trunk of a tree, long, narrow, well adapted for speed, were balanced by means of a long bamboo pole, which floated on the water. They were managed by skillful, half-naked paddlers, and I watched their advance with some uneasiness. It was evident that these Papuans had already had dealings with the Europeans, and knew their ships. But this long iron cylinder anchored in the bay, without masts or chimney, what could they think of it? Nothing good, for at first they kept at a respectful distance. However, seeing it motionless, by degrees they

took courage, and sought to familiarize themselves with it. Now this familiarity was precisely what it was necessary to avoid. Our arms, which were noiseless, could only produce a moderate effect on the savages, who have little respect for aught but blustering things. The thunderbolt without the reverberations of thunder would frighten man but little, though the danger lies in the lightning, not in the noise.

At this moment the canoes approached the *Nautilus,* and a shower of arrows alighted on her.

I went down to the saloon, but found no one there. I ventured to knock at the door that opened into the captain's room. "Come in," was the answer.

I entered, and found Captain Nemo deep in algebraical calculations of x and other quantities.

"I am disturbing you," said I, for courtesy's sake.

"That is true, M. Aronnax," replied the captain; "but I think you have serious reasons for wishing to see me?"

"Very grave ones; the natives are surrounding us in their canoes, and in a few minutes we shall certainly be attacked by many hundreds of savages."

"Ah!" said Captain Nemo quietly. "They are come with their canoes?"

"Yes, sir."

"Well, sir, we must close the hatches."

"Exactly, and I came to say to you—"

"Nothing can be more simple," said Captain Nemo. And pressing an electric button, he transmitted an order to the ship's crew.

"It is all done, sir," said he, after some moments. "The pinnace is ready, and the hatches are closed. You do not fear, I imagine, that these gentlemen could stave in walls on which the balls of your frigate have had no effect?"

"No, captain; but a danger still exists."

"What is that, sir?"

"It is that to-morrow, at about this hour, we must open the hatches to renew the air of the *Nautilus.* Now if, at this moment, the Papuans should occupy the platform, I do not see how you could prevent them from entering."

"Then, sir, you suppose that they will board us?"

"I am certain of it."

"Well, sir, let them come. I see no reason for hindering them. After all, these Papuans are poor creatures, and I am unwilling that my visit to the island of Gueberoan should cost the life of a single one of these wretches."

Upon that I was going away; but Captain Nemo detained me, and asked me to sit down by him. He questioned me with interest about our excursions on shore, and our hunting, and seemed not to understand the craving for meat that possessed the Canadian. Then the conversation turned on various subjects, and without being more communicative, Captain Nemo showed himself more amiable.

Among other things, we happened to speak of the situation of the *Nautilus,* run aground in exactly the same spot in this strait where Dumont d'Urville was nearly lost. Apropos of this:

"This D'Urville was one of your great sailors," said the captain to me; "one of your most intelligent navigators. He is the Captain Cook of you Frenchmen. Unfortunate man of science, after having braved the icebergs of the South Pole, the coral reefs of Oceania, the cannibals of the Pacific, to perish miserably in a railway train! If this energetic man could have reflected during the last moments of his life, what must have been uppermost in his last thoughts, do you suppose?"

So speaking, Captain Nemo seemed moved, and his emotion gave me a better opinion of him. Then, chart in hand, we reviewed the travels of the French navigator, his voyages of circumnavigation, his double detention at the South Pole, which led to the discovery of Adelaide and Louis Philippe, and fixing the hydrographical bearings of the principal islands of Oceania.

"That which your D'Urville has done on the surface of the seas," said Captain Nemo, "that have I done under them, and more easily, more completely than he. The *Astrolabe* and the *Boussole,* incessantly tossed about by the hurricanes, could not be worth the *Nautilus,* quiet repository of labor that she is, truly motionless in the midst of the waters."

"To-morrow," added the captain, rising, "to-morrow, at twenty minutes to three P.M., the *Nautilus* shall float, and leave the Strait of Torres uninjured."

Having curtly pronounced these words, Captain Nemo bowed slightly. This was to dismiss me, and I went back to my room.

There I found Conseil, who wished to know the result of my interview with the captain.

"My boy," said I, "when I feigned to believe that his *Nautilus* was threatened by the natives of Papua, the captain answered me very sarcastically. I have but one thing to say to you: Have confidence in him, and go to sleep in peace."

"Have you no need of my services, sir?"

"No, my friend. What is Ned Land doing?"

"If you will excuse me, sir," answered Conseil, "friend Ned is busy making a kangaroo-pie, which will be a marvel."

I remained alone, and went to bed, but slept indifferently. I heard the noise of the savages, who stamped on the platform, uttering deafening cries. The night passed thus, without disturbing the ordinary repose of the crew. The presence of these cannibals affected them no more than the soldiers of a masked battery care for the ants that crawl over its front.

At six in the morning I rose. The hatches had not been opened. The inner air was not renewed, but the reservoirs, filled ready for any emergency, were now resorted to, and discharged several cubic feet of oxygen into the exhausted atmosphere of the *Nautilus.*

I worked in my room till noon, without having seen Captain Nemo, even for an instant. On board no preparations for departure were visible.

I waited still some time, then went into the large saloon. The clock marked half-past two. In ten minutes it would be high tide, and if Captain Nemo had not made a rash promise, the *Nautilus* would be immediately detached. If not, many months would pass ere she could leave her bed of coral.

However, some warning vibrations began to be felt in the vessel. I heard the keel grating against the rough, calcareous bottom of the coral reef.

At five-and-twenty minutes to three, Captain Nemo appeared in the saloon.

“We are going to start,” said he.

“Ah!” replied I.

“I have given the order to open the hatches.”

“And the Papuans?”

“The Papuans?” answered Captain Nemo, slightly shrugging his shoulders.

“Will they not come inside the *Nautilus?”*

“How?”

“Only by leaping over the hatches you have opened.”

“M. Aronnax,” quietly answered Captain Nemo, “they will not enter the hatches of the *Nautilus* in that way, even if they were open.”

I looked at the captain.

“You do not understand?” said he.

“Hardly.”

“Well, come and you will see.”

I directed my steps toward the central staircase. There Ned Land and Conseil were slyly watching some of the ship’s crew, who were opening the hatches, while cries of rage and fearful vociferations resounded outside.

The port lids were pulled down outside. Twenty horrible faces appeared. But the first native who placed his hand on the stair-rail, struck from behind by some invisible force, I know not what, fled, uttering the most fearful cries, and making the wildest contortions.

Ten of his companions followed him. They met with the same fate.

Conseil was in ecstasy. Ned Land, carried away by his violent instincts, rushed on to the staircase. But the moment he seized the rail with both hands, he, in his turn, was overthrown.

“I am struck by a thunderbolt,” cried he, with an oath.

This explained all. It was no rail, but a metallic cable, charged with electricity from the deck, communicating with the platform. Whoever touched it felt a powerful shock—and this shock would have been mortal, if Captain Nemo had discharged into the conductor the whole force of the current. It might truly be said that between his assailants and himself he had stretched a network of electricity which none could pass with impunity.

Meanwhile, the exasperated Papuans had beaten a retreat, paralyzed with terror. As for us, half-laughing, we consoled and rubbed the unfortunate Ned Land, who swore like one possessed.

But, at this moment, the *Nautilus,* raised by the last waves of the tide, quitted her coral bed exactly at the fortieth minute fixed by the captain. Her screw swept the waters slowly and majestically. Her speed increased gradually, and sailing on the surface of the ocean, she quitted safe and sound the dangerous passes of the Straits of Torres.

Chapter XXII

"*Ægri Somnia*"[at]

THE FOLLOWING DAY, 10TH of January, the *Nautilus* continued her course between two seas, but with such remarkable speed that I could not estimate it at less than thirty-five miles an hour. The rapidity of her screw was such that I could neither follow nor count its evolutions. When I reflected that this marvelous electric agent, after having afforded motion, heat, and light to the *Nautilus,* still protected her from outward attack, and transformed her into an ark of safety which no profane hand might touch without being thunder-stricken, my admiration was unbounded, and from the structure it extended to the engineer who had called it into existence.

Our course was directed to the west, and on the 11th of January we doubled Cape Wessel, situated in 135° longitude and 10° north latitude, which forms the east point of the Gulf of Carpentaria. The reefs were still numerous, but more equalized, and marked on the chart with extreme precision. The *Nautilus* easily avoided the breakers of Money to port, and the Victoria reefs to starboard, placed at 130° longitude, and on the tenth parallel which we strictly followed.

On the 13th of January, Captain Nemo arrived in the Sea of Timor, and recognized the island of that name in 122° longitude.

From this point the direction of the *Nautilus* inclined toward the southwest. Her head was set for the Indian Ocean. Where would the fancy of Captain Nemo carry us next? Would he return to the coast of Asia, or would he approach again the shores of Europe? Improbable conjectures both, for a man who fled from inhabited continents. Then, would he descend to the south? Was he going to double the Cape of Good Hope, then Cape Horn, and finally go as far as the antarctic pole? Would he come back at last to the Pacific, where his Nautilus could sail free and independently? Time would show.

After having skirted the sands of Cartier, of Hibernia, Seringapatam, and Scott, last efforts of the solid against the liquid element, on the 14th of January we lost sight of land altogether. The speed of the *Nautilus* was considerably abated, and with irregular course she sometimes swam in the bosom of the waters, sometimes floated on their surface.

During this period of the voyage, Captain Nemo made some interesting

experiments on the varied temperature of the sea, in different beds. Under ordinary conditions, these observations are made by means of rather complicated instruments, and with somewhat doubtful results, by means of thermometrical sounding-leads, the glasses often breaking under the pressure of the water, or an apparatus grounded on the variations of the resistance of metals to the electric currents. Results so obtained could not be correctly calculated. On the contrary, Captain Nemo went himself to test the temperature in the depths of the sea, and his thermometer, placed in communication with the different sheets of water, gave him the required degree immediately and accurately.

It was thus that, either by overloading her reservoirs, or by descending obliquely by means of her inclined planes the *Nautilus* successively attained the depth of three, four, five, seven, nine, and ten thousand yards, and the definite result of this experience was, that the sea preserved an average temperature of four degrees and a half, at a depth of five thousand fathoms, under all latitudes.

On the 16th of January, the *Nautilus* seemed becalmed, only a few yards beneath the surface of the waves. Her electric apparatus remained inactive, and her motionless screw left her to drift at the mercy of the currents. I supposed that the crew was occupied with interior repairs, rendered necessary by the violence of the mechanical movements of the machine.

My companions and I then witnessed a curious spectacle. The hatches of the saloon were open, and as the beacon-light of the *Nautilus* was not in action, a dim obscurity reigned, in the midst of the waters. I observed the state of the sea under these conditions, and the largest fish appeared to me no more than scarcely defined shadows, when the *Nautilus* found herself suddenly transported into full light. I thought at first that the beacon had been lighted, and was casting its electric radiance into the liquid mass. I was mistaken, and after a rapid survey perceived my error.

The *Nautilus* floated in the midst of a phosphorescent bed, which, in this obscurity, became quite dazzling. It was produced by myriads of luminous animalculæ, whose brilliancy was increased as they glided over the metallic hull of the vessel. I was surprised by lightning in the midst of these luminous sheets, as though they had been rivulets of lead melted in an ardent furnace, or metallic masses brought to a white heat, so that, by force of contrast, certain portions of light appeared to cast a shade in the midst of the general ignition, from which all shade seemed banished. No; this was not the calm irradiation of our ordinary lightning. There was unusual life and vigor; this was truly living light!

In reality, it was an infinite agglomeration of colored infusoria, of veritable globules of diaphanous jelly, provided with a thread-like tentacle, and of which as many as twenty-five thousand have been counted in less than two cubic half-inches of water; and their light was increased by the glimmering peculiar to the medusæ, starfish, aurelia, and other phosphorescent zoöphytes, impregnated by the grease of the organic matter decomposed by the sea, and,

perhaps, the mucus secreted by the fish.

During several hours the *Nautilus* floated in these brilliant waves, and our admiration increased as we watched the marine monsters disporting themselves like salamanders. I saw there, in the midst of this fire that burns not, the swift and elegant porpoise (the indefatigable clown of the ocean), and some sword-fish ten feet long, those prophetic heralds of the hurricane, whose formidable sword would now and then strike the glass of the saloon. Then appeared the smaller fish, the variegated balista, the leaping mackerel, wolfthorntails, and a hundred others which striped the luminous atmosphere as they swam. This dazzling spectacle was enchanting! Perhaps some atmospheric condition increased the intensity of this phenomenon. Perhaps some storm agitated the surface of the waves. But, at this depth of some yards, the *Nautilus* was unmoved by its fury, and reposed peacefully in still water.

So we progressed, incessantly charmed by some new marvel. Conseil arranged and classed his zoöphytes, his articulata, his mollusks, his fishes. The days passed rapidly away, and I took no account of them. Ned, according to habit, tried to vary the diet on board. Like snails, we were fixed to our shells, and I declare it is easy to lead a snail's life.

Thus this life seemed easy and natural, and we thought no longer of the life we led on land; but something happened to recall us to the strangeness of our situation.

On the 18th of January, the *Nautilus* was in 105° longitude and 15° south latitude. The weather was threatening, the sea rough and rolling. There was a strong east wind. The barometer, which had been going down for some days, foreboded a coming storm. I went up on the platform just as the second lieutenant was taking the measure of the horary angles, and waited, according to habit, till the daily phrase was said. But, on this day, it was exchanged for another phrase not less incomprehensible. Almost directly, I saw Captain Nemo appear, with a glass, looking toward the horizon.

For some minutes he was immovable, without taking his eye off the point of observation. Then he lowered his glass, and exchanged a few words with his lieutenant. The latter seemed to be a victim to some emotion that he tried in vain to repress. Captain Nemo, having more command over himself, was cool. He seemed, too, to be making some objections, to which the lieutenant replied by formal assurances; at least I concluded so by the difference of their tones and gestures. For myself, I had looked carefully in the direction indicated without seeing anything. The sky and water were lost in the clear line of the horizon.

However, Captain Nemo walked from one end of the platform to the other, without looking at me, perhaps without seeing me. His step was firm, but less regular than usual. He stopped sometimes, crossed his arms, and observed the sea. What could he be looking for on that immense expanse?

The *Nautilus* was then some hundreds of miles from the nearest coast.

The lieutenant had taken up the glass and examined the horizon steadfastly, going and coming, stamping his foot and showing more nervous agitation than his superior officer. Besides, this mystery must necessarily be solved, and before long; for, upon an order from Captain Nemo, the engine, increasing its propelling power, made the screw turn more rapidly.

Just then the lieutenant drew the captain's attention again. The latter stopped walking and directed his glass toward the place indicated. He looked long. I felt very much puzzled, and descended to the drawing-room and took out an excellent telescope that I generally used. Then, leaning on the cage of the watch-light, that jutted out from the front of the platform, set myself to look over all the line of the sky and sea.

But my eye was no sooner applied to the glass, than it was quickly snatched out of my hands.

I turned round. Captain Nemo was before me, but I did not know him. His face was transfigured. His eyes flashed sullenly; his teeth were set; his stiff body, clinched fists, and head shrunk between his shoulders, betrayed the violent agitation that pervaded his whole frame. He did not move. My glass, fallen from his hands, had rolled at his feet.

Had I unwittingly provoked this fit of anger? Did this incomprehensible person imagine that I had discovered some forbidden secret? No; I was not the object of this hatred, for he was not looking at me, his eye was steadily fixed upon the impenetrable point of the horizon. At last Captain Nemo recovered himself. His agitation subsided. He addressed some words in a foreign language to his lieutenant, then turned to me. "M. Aronnax," he said, in rather an imperious tone, "I require you to keep one of the conditions that bind you to me."

"What is it, captain?"

"You must be confined, with your companions, until I think fit to release you."

"You are the master," I replied, looking steadily at him. "But may I ask you one question?"

"None, sir."

There was no resisting this imperious command; it would have been useless. I went down to the cabin occupied by Ned Land and Conseil, and told them the captain's determination. You may judge how this communication was received by the Canadian.

But there was no time for altercation. Four of the crew waited at the door, and conducted us to that cell where we had passed our first night on board the *Nautilus*.

Ned Land would have remonstrated, but the door was shut upon him.

“Will master tell me what this means?” asked Conseil.

I told my companions what had passed. They were as much astonished as I, and equally at a loss how to account for it.

Meanwhile, I was absorbed in my own reflections, and could think of nothing but the strange fear depicted in the captain’s countenance. I was utterly at a loss to account for it, when my cogitations were disturbed by these words from Ned Land:

“Hallo! Breakfast is ready!”

And indeed the table was laid. Evidently Captain Nemo had given this order at the same time that he had hastened the speed of the *Nautilus*.

“Will master permit me to make a recommendation?” asked Conseil.

“Yes, my boy.”

“Well, it is that master breakfast. It is prudent, for we do not know what may happen.”

“You are right, Conseil.”

“Unfortunately,” said Ned Land, “they have only given us the ship’s fare.”

“Friend Ned,” asked Conseil, “what would you have said if the breakfast had been entirely forgotten?”

This argument cut short the harpooner’s recriminations.

We sat down to table. The meal was eaten in silence.

Just then, the luminous globe that lighted the cell went out, and left us in total darkness. Ned Land was soon asleep, and what astonished me was that Conseil went off into a heavy sleep. I was thinking what could have caused his irresistible drowsiness, when I felt my brain becoming stupefied. In spite of my efforts to keep my eyes open, they would close. A painful suspicion seized me. Evidently soporific substances had been mixed with the food we had just taken. Imprisonment was not enough to conceal Captain Nemo’s projects from us; sleep was more necessary.

I then heard the panels shut. The undulations of the sea, which caused a slight rolling motion, ceased. Had the *Nautilus* quitted the surface of the ocean? Had it gone back to the motionless bed of water? I tried to resist sleep. It was impossible. My breathing grew weak. I felt a mortal cold freeze my stiffened and half-paralyzed limbs. My eyelids, like leaden caps, fell over my eyes. I could not raise them; a morbid sleep, full of hallucinations, bereft me of my being. Then the visions disappeared, and left me in complete insensibility.

Chapter XXIII

The Coral Kingdom

THE NEXT DAY I WOKE with my head singularly clear. To my great surprise I was in my own room. My companions, no doubt, had been reinstated in their cabin, without having perceived it any more than I. Of what had passed during the night they were as ignorant as I was, and to penetrate this mystery I only reckoned upon the chances of the future.

I then thought of quitting my room. Was I free again, or a prisoner? Quite free. I opened the door, went to the half-deck, went up the central stairs. The panels, shut the evening before, were open. I went on to the platform.

Ned Land and Conseil waited there for me. I questioned them; they knew nothing. Lost in a heavy sleep in which they had been totally unconscious, they had been astonished at finding themselves in their cabin.

As for the *Nautilus,* it seemed quiet and mysterious as ever. It floated on the surface of the waves at a moderate pace. Nothing seemed changed on board.

The second lieutenant then came on to the platform, and gave the usual order below.

As for Captain Nemo, he did not appear.

Of the people on board I only saw the impassive steward, who served me with his usual dumb regularity.

About two o'clock, I was in the drawing-room, busied in arranging my notes, when the captain opened the door and appeared. I bowed. He made a slight inclination in return, without speaking. I resumed my work, hoping that he would perhaps give me some explanation of the events of the preceding night. He made none. I looked at him. He seemed fatigued; his heavy eyes had not been refreshed by sleep; his face looked very sorrowful. He walked to and fro, sat down and got up again, took up a chance book, put it down, consulted his instruments without taking his habitual notes, and seemed restless and uneasy. At last he came up to me, and said:

"Are you a doctor, M. Aronnax?"

I so little expected such a question that I stared some time at him without answering.

“Are you a doctor?” he repeated. “Several of your colleagues have studied medicine.”

“Well,” said I, “I am a doctor and resident surgeon to the hospital. I practiced several years before entering the museum.”

“Very well, sir.”

My answer had evidently satisfied the captain. But not knowing what he would say next, I waited for other questions, reserving my answers according to circumstances.

“M. Aronnax, will you consent to prescribe for one of my men?” he asked.

“Is he ill?”

“Yes.”

“I am ready to follow you.”

“Come then.”

I own my heart beat, I do not know why. I saw a certain connection between the illness of one of the crew and the events of the day before; and this mystery interested me at least as much as the sick man.

Captain Nemo conducted me to the poop of the *Nautilus,* and took me into a cabin situated near the sailors’ quarters.

There, on a bed, lay a man about forty years of age, with a resolute expression of countenance, a true type of an Anglo-Saxon.

I leaned over him. He was not only ill, he was wounded. His head, swathed in bandages covered with blood, lay on a pillow. I undid the bandages, and the wounded man looked at me with his large eyes and gave no sign of pain as I did it. It was a horrible wound. The skull, shattered by some deadly weapon, left the brain exposed, which was much injured. Clots of blood had formed in the bruised and broken mass, in color like the dregs of wine.

There was both contusion and suffusion of the brain. His breathing was slow, and some spasmodic movements of the muscles agitated his face. I felt his pulse. It was intermittent. The extremities of the body were growing cold already, and I saw death must inevitably ensue. After dressing the unfortunate man’s wounds, I readjusted the bandages on his head, and turned to Captain Nemo.

“What caused this wound?” I asked.

“What does it signify?” he replied evasively. “A shock has broken one of the levers of the engine, which struck myself. But your opinion as to his state?”

I hesitated before giving it.

“You may speak,” said the captain. “This man does not understand French.”

I gave a last look at the wounded man.

“He will be dead in two hours.”

“Can nothing save him?”

“Nothing.”

Captain Nemo’s hand contracted, and some tears glistened in his eyes, which I thought incapable of shedding any.

For some moments I still watched the dying man, whose life ebbed slowly. His pallor increased under the electric light that was shed over his deathbed. I looked at his intelligent forehead, furrowed with premature wrinkles, produced probably by misfortune and sorrow. I tried to learn the secret of his life from the last words that escaped his lips.

“You can go now, M. Aronnax,” said the captain.

I left him in the dying man’s cabin, and returned to my room, much affected by this scene. During the whole day, I was haunted by uncomfortable suspicions, and at night I slept badly, and, between my broken dreams, I fancied I heard distant sighs like the notes of a funeral psalm. Were they the prayers of the dead, murmured in that language that I could not understand?

The next morning I went on to the bridge. Captain Nemo was there before me. As soon as he perceived me he came to me.

“Professor, will it be convenient to you to make a submarine excursion to-day?”

“With my companions?” I asked.

“If they like.”

“We obey your orders, captain.”

“Will you be so good, then, as to put on your cork-jackets?”

It was not a question of dead or dying. I rejoined Ned Land and Conseil, and told them of Captain Nemo’s proposition. Conseil hastened to accept it, and this time the Canadian seemed quite willing to follow our example.

It was eight o’clock in the morning. At half-past eight we were equipped for this new excursion, and provided with two contrivances for light and breathing. The double door was open; and accompanied by Captain Nemo, who was followed by a dozen of the crew, we set foot, at a depth of about thirty feet, on the solid bottom on which the *Nautilus* rested.

A slight declivity ended in an uneven bottom, at fifteen fathoms depth. This bottom differed entirely from the one I had visited on my first excursion under the waters of the Pacific Ocean. Here, there was no fine sand, no submarine prairies, no sea-forest. I immediately recognized that marvelous region in which, on that day, the captain did the honors to us. It was the coral kingdom. In the zoöphyte branch and in the alcyon class I noticed the gorgoneæ, the isidiæ, and the corollariæ.

The light produced a thousand charming varieties, playing in the midst of the branches that were so vividly colored. I seemed to see the membranous and cylindrical tubes tremble beneath the undulation of the waters. I was tempted to gather their fresh petals, ornamented with delicate tentacles, some just blown, the others budding, while small fish, swimming swiftly, touched them slightly like flights of birds. But if my hand approached these living flowers, these animated sensitive plants, the whole colony took alarm. The white petals reentered their red cases, the flowers faded as I looked, and the bush changed into a block of stony knobs.

Chance had thrown me just by the most precious specimens of this zoöphyte. This coral was more valuable than that found in the Mediterranean, on the coasts of France, Italy, and Barbary. Its tints justified the poetical names of “Flower of Blood” and “Froth of Blood” that trade has given to its most beautiful productions. Coral is sold for £20 per ounce, and in this place the watery beds would make the fortunes of a company of coral-divers. This precious matter, often confounded with other polypi, formed then the inextricable plots called “macciota,” and on which I noticed several beautiful specimens of pink coral.

But soon the bushes contract, and the arborizations increase. Real petrified thickets, long joists of fantastic architecture, were disclosed before us. Captain Nemo placed himself under a dark gallery, where by a slight declivity we reached a depth of 100 yards. The light from our lamps produced sometimes magical effects, following the rough outlines of the natural arches, and pendants disposed like lusters, that were tipped with points of fire. Between the coralline shrubs I noticed other polypi not less curious—melites, and irises with articulated ramifications; also some tufts of coral, some green, others red, like seaweed incrusted in their calcareous salts, that naturalists, after long discussion, have definitely classed in the vegetable kingdom. But following the remark of a thinking man, “there is perhaps the real point where life rises obscurely from the sleep of a stone, without detaching itself from the rough point of departure.”

At last, after walking two hours, we had attained a depth of about 300 yards, that is to say, the extreme limit on which coral begins to form. But there was no isolated bush, nor modest brushwood, at the bottom of lofty trees. It was an immense forest of large mineral vegetations, enormous petrified trees, united by garlands of elegant plumarias, sea bindweed, all adorned with clouds and reflections. We passed freely under their high branches, lost in the shade of the waves, while at our feet, tubipores, meandrines, stars, fungi, and caryophyllidæ formed a carpet of flowers sown

with dazzling gems. What an indescribable spectacle!

Captain Nemo had stopped. I and my companions halted, and turning round, I saw his men were forming a semicircle round their chief. Watching attentively, I observed that four of them carried on their shoulders an object of an oblong shape.

We occupied in this place the center of a vast glade surrounded by the lofty foliage of the submarine forest. Our lamps threw over the place a sort of clear twilight that singularly elongated the shadows on the ground. At the end of the glade the darkness increased, and was only relieved by little sparks reflected by the points of coral.

Ned Land and Conseil were near me. We watched, and I thought I was going to witness a strange scene. On observing the ground, I saw that it was raised in certain places by slight excrescences incrusted with limy deposits, and disposed with a regularity that betrayed the hand of man.

In the midst of the glade, on a pedestal of rocks roughly piled up, stood a cross of coral, that extended its long arms that one might have thought were made of petrified blood.

Upon a sign from Captain Nemo, one of the men advanced; and at some feet from the cross, he began to dig a hole with a pickaxe that he took from his belt. I understood all! This glade was a cemetery, this hole a tomb, this oblong object the body of the man who had died in the night! The captain and his men had come to bury their companion in this general resting-place, at the bottom of this inaccessible ocean!

The grave was being dug slowly; the fish fled on all sides while their retreat was being thus disturbed; I heard the strokes of the pickaxe, which sparkled when it hit upon some flint lost at the bottom of the waters. The hole was soon large and deep enough to receive the body. Then the bearers approached; the body, enveloped in a tissue of white byssus, was lowered into the damp grave. Captain Nemo, with his arms crossed on his breast, and all the friends of he who had loved them, knelt in prayer.

The grave was then filled in with the rubbish taken from the ground, which formed a slight mound. When this was done, Captain Nemo and his men rose; then, approaching the grave, they knelt again, and all extended their hands in sign of a last adieu. Then the funeral procession returned to the *Nautilus,* passing under the arches of the forest, in the midst of thickets, along the coral bushes, and still on the ascent. At last the fires on board appeared, and their luminous track guided us to the *Nautilus.* At one o'clock we had returned.

As soon as I had changed my clothes, I went up on to the platform, and, a prey to conflicting emotions, I sat down near the binnacle. Captain Nemo joined me. I rose and said to him:

"So, as I said he would, this man died in the night?"

“Yes, M. Aronnax.”

“And he rests now, near his companions, in the coral cemetery?”

“Yes, forgotten by all else, but not by us. We dug the grave, and the polypi undertake to seal our dead for eternity.” And burying his face quickly in his hands, he tried in vain to suppress a sob. Then he added: “Our peaceful cemetery is there, some hundred feet below the surface of the waves.”

“Your dead sleep quietly, at least, captain, out of the reach of sharks.”

“Yes, sir, of sharks and men,” gravely replied the captain.

PART TWO

Chapter I

The Indian Ocean

WE NOW COME TO the second part of our journey under the sea. The first ended with the moving scene in the coral cemetery, which left such a deep impression on my mind. Thus, in the midst of this great sea, Captain Nemo's life was passing even to his grave, which he had prepared in one of its deepest abysses. There, not one of the ocean's monsters could trouble the last sleep of the crew of the *Nautilus,* of those friends riveted to each other in death as in life. "Nor any man either," had added the captain. Still the same fierce, implacable defiance toward human society!

I could no longer content myself with the hypothesis which satisfied Conseil.

That worthy fellow persisted in seeing in the commander of the *Nautilus* one of those unknown savants who return mankind contempt for indifference. For him, he was a misunderstood genius, who, tired of earth's deceptions, had taken refuge in this inaccessible medium, where he might follow his instincts freely. To my mind, this hypothesis explained but one side of Captain Nemo's character.

Indeed, the mystery of that last night, during which we had been chained in prison, the sleep, and the precaution so violently taken by the captain of snatching from my eyes the glass I had raised to sweep the horizon, the mortal wound of the man, due to an unaccountable shock of the *Nautilus,* all put me on a new track. No; Captain Nemo was not satisfied with shunning man. His formidable apparatus not only suited his instinct of freedom, but, perhaps, also the design of some terrible retaliation.

At this moment nothing is clear to me; I catch but a glimpse of light amid all the darkness, and I must confine myself to writing as events shall dictate.

That day, the 24th of January, 1868, at noon, the second officer came to take the altitude of the sun. I mounted the platform, lit a cigar, and watched the operation. It seemed to me that the man did not understand French; for several times I made remarks in a loud voice, which must have drawn from him some involuntary sign of attention, if he had understood them; but he remained undisturbed and dumb.

As he was taking observations with the sextant, one of the sailors of the *Nautilus* (the strong man who had accompanied us on our first submarine

excursion to the island of Crespo) came to clean the glasses of the lantern. I examined the fittings of the apparatus, the strength of which was increased a hundredfold by lenticular rings, placed similar to those in a lighthouse, and which projected their brilliance in a horizontal plane. The electric lamp was combined in such a way as to give its most powerful light. Indeed it was produced in *vacuo,* which insured both its steadiness and its intensity. This vacuum economized the graphite points, between which the luminous arc was developed—an important point of economy for Captain Nemo, who could not easily have replaced them, and under these conditions their waste was imperceptible. When the *Nautilus* was ready to continue its submarine journey, I went down to the saloon. The panels were closed and the course marked direct west.

We were furrowing the waters of the Indian Ocean, a vast liquid plain with a surface of 1,200,000,000 acres, and whose waters are so clear and transparent that anyone leaning over them would turn giddy. The *Nautilus* usually floated between fifty and a hundred fathoms deep. We went on so for some days. To anyone but myself, who had a great love for the sea, the hours would have seemed long and monotonous; but the daily walks on the platform, when I steeped myself in the reviving air of the ocean, the sight of the rich waters through the windows of the saloon, the books in the library, the compiling of my memoirs, took up all my time, and left me not a moment of *ennui* or weariness.

For some days we saw a great number of aquatic birds, sea-mews or gulls. Some were cleverly killed, and, prepared in a certain way, made very acceptable water game. Among large-winged birds, carried a long distance from all lands, and resting upon the waves from the fatigue of their flight, I saw some magnificent albatrosses, uttering discordant cries like the braying of an ass, and birds belonging to the family of the longipennates. The family of the totipalmates was represented by the sea-swallows, which caught the fish from the surface, and by numerous phaetons, or lepturi; among others, the phaeton with red lines, as large as a pigeon, whose white plumage, tinted with pink, shows off to advantage the blackness of its wings.

As to the fish, they always provoked our admiration when we surprised the secrets of their aquatic life through the open panels. I saw many kinds which I never before had a chance of observing.

I shall notice chiefly ostracions peculiar to the Red Sea, the Indian Ocean, and that part which washes the coast of tropical America. These fishes, like the tortoise, the armadillo, the sea hedgehog, and the crustacea, are protected by a breastplate which is neither chalky nor stony, but real bone. In some it takes the form of a solid triangle, in others of a solid quadrangle. Among the triangular I saw some an inch and a half in length, with wholesome flesh and a delicious flavor; they are brown at the tail and yellow at the fins, and I recommend their introduction into fresh water, to which a certain number of sea-fish easily accustom themselves. I would also mention quadrangular ostracions, having on the back four large tubercles; some dotted over with white spots on the lower part of the body, and which may be tamed like birds;

trigons provided with spikes formed by the lengthening of their bony shell, and which from their strange gruntings are called “sea-pigs”; also dromedaries with large humps in the shape of a cone, whose flesh is very tough and leathery.

I now borrow from the daily notes of Master Conseil. “Certain fish of the genus petrodon peculiar to those seas, with red backs and white chests, which are distinguished by three rows of longitudinal filaments, and some electrical, seven inches long, decked in the liveliest colors. Then, as specimens of other kinds, some ovoides, resembling an egg of a dark brown color, marked with white bands and without tails; diodons, real sea porcupines, furnished with spikes, and capable of swelling in such a way as to look like cushions bristling with darts; hippocampi, common to every ocean; some pegasi with lengthened snouts, which their pectoral fins, being much elongated and formed in the shape of wings, allow, if not to fly, at least to shoot into the air; pigeon spatulæ, with tails covered with many rings of shell; macrognathi with long jaws, an excellent fish, nine inches long, and bright with most agreeable colors; pale-colored calliomores, with rugged heads; and plenty of chætodons, with long and tubular muzzles, which kill insects by shooting them, as from an air-gun, with a single drop of water. These we may call the fly-catchers of the seas.

“In the eighty-ninth genus of fishes, classed by Lacépède, belonging to the second lower class of bony, characterized by opercules and bronchial membranes, I remarked the scorpæna, the head of which is furnished with spikes, and which has but one dorsal fin; these creatures are covered or not, with little shells, according to the sub-class to which they belong. The second sub-class gives us specimens of didactyles fourteen or fifteen inches in length, with yellow rays, and heads of a most fantastic appearance. As to the first sub-class, it gives several specimens of that singular-looking fish appropriately called a ‘sea-frog,’ with large head, sometimes swollen with protuberances, bristling with spikes, and covered with tubercles; it has irregular and hideous horns; its body and tail are covered with callosities; its sting makes a dangerous wound; it is both repugnant and horrible to look at.”

From the 21st to the 23d of January, the *Nautilus* went at the rate of two hundred and fifty leagues in twenty-four hours, being five hundred and forty miles, or twenty-two miles an hour. If we recognized so many different varieties of fish, it was because, attracted by the electric light, they tried to follow us, the greater part, however, were soon distanced by our speed, though some kept their place in the waters of the *Nautilus* for a time. The morning of the 24th, in 12° 5’ south latitude, and 94° 33’ longitude, we observed Keeling Island, a madrepore formation, planted with magnificent cocoas, and which had been visited by Mr. Darwin and Captain Fitzroy. The *Nautilus* skirted the shores of this desert island for a little distance. Its nets brought up numerous specimens of polypi, and curious shells of molluska. Some precious productions of the species of delphinulae enriched the treasures of Captain Nemo, to which I added an astræ punctifera, a kind of parasite polypus often found fixed to a shell. Soon Keeling Island disappeared from the

horizon, and our course was directed to the northwest in the direction of the Indian Peninsula.

From Keeling Island our course was slower and more variable, often taking us into great depths. Several times they made use of the inclined planes, which certain internal levers placed obliquely to the water-line. In that way we went about two miles, but without ever obtaining the greatest depths of the Indian Sea, which soundings of seven thousand fathoms have never reached. As to the temperature of the lower strata, the thermometer invariably indicated 4° above zero. I only observed that, in the upper regions, the water was always colder in the high levels than at the surface of the sea.

On the 25th of January, the ocean was entirely deserted; the *Nautilus* passed the day on the surface, beating the waves with its powerful screw, and making them rebound to a great height. Who under such circumstances would not have taken it for a gigantic cetacean? Three parts of this day I spent on the platform. I watched the sea. Nothing on the horizon, till about four o'clock a steamer running west on our counter. Her masts were visible for an instant, but she could not see the *Nautilus,* being too low in the water. I fancied this steamboat belonged to the P. O. Company, which runs from Ceylon to Sydney, touching at King George's Point and Melbourne.

At five o'clock in the evening, before that fleeting twilight which binds night to day in tropical zones, Conseil and I were astonished by a curious spectacle.

It was a shoal of argonauts traveling along on the surface of the ocean. We could count several hundreds. They belonged to the tubercle kind which are peculiar to the Indian seas.

These graceful mollusks moved backward by means of their locomotive tube, through which they propelled the water already drawn in. Of their eight tentacles, six were elongated, and stretched out floating on the water, while the other two, rolled up flat, were spread to the wind like a light sail. I saw their spiral-shaped and fluted shells, which Cuvier justly compares to an elegant skiff. A boat indeed! It bears the creature which secretes it without its adhering to it.

For nearly an hour the *Nautilus* floated in the midst of this shoal of mollusks. Then I know not what sudden fright they took; but as if at a signal every sail was furled, the arms folded, the body drawn in, the shells turned over, changing their center of gravity, and the whole fleet disappeared under the waves. Never did the ships of a squadron maneuver with more unity.

At that moment night fell suddenly, and the reeds, scarcely raised by the breeze, lay peaceably under the sides of the *Nautilus.*

The next day, 26th of January, we cut the equator at the eighty-second meridian, and entered the northern hemisphere. During the day, a formidable troop of sharks accompanied us, terrible creatures, which multiply in these seas, and make them very dangerous. They were "cestracio philippi" sharks,

with brown backs and whitish bellies, armed with eleven rows of teeth—eyed sharks—their throat being marked with a large black spot surrounded with white like an eye. There were also some Isabella sharks, with rounded snouts marked with dark spots. These powerful creatures often hurled themselves at the windows of the saloon with such violence as to make us feel very insecure. At such times Ned Land was no longer master of himself. He wanted to go to the surface and harpoon the monsters, particularly certain smooth-hound sharks, whose mouth is studded with teeth like a mosaic; and large tiger-sharks nearly six yards long, the last-named of which seemed to excite him more particularly. But the *Nautilus,* accelerating her speed, easily left the most rapid of them behind.

The 27th of January, at the entrance of the vast Bay of Bengal, we met repeatedly a forbidding spectacle—dead bodies floating on the surface of the water. They were the dead of the Indian villages, carried by the Ganges[au] to the level of the sea, and which the vultures, the only undertakers of the country, had not been able to devour. But the sharks did not fail to help them at their funereal work.

About seven o'clock in the evening, the *Nautilus,* half immersed, was sailing in a sea of milk. At first sight the ocean seemed lactified. Was it the effect of the lunar rays? No; for the moon, scarcely two days old, was still lying hidden under the horizon in the rays of the sun. The whole sky, though lit by the sidereal rays, seemed black by contrast with the whiteness of the waters.

Conseil could not believe his eyes, and questioned me as to the cause of this strange phenomenon. Happily I was able to answer him.

"It is called a milk sea," I explained; "a large extent of white wavelets often to be seen on the coasts of Amboyna, and in these parts of the sea."

"But, sir," said Conseil, "can you tell me what causes such an effect, for I suppose the water is not really turned into milk?"

"No, my boy; and the whiteness which surprises you is caused only by the presence of myriads of infusoria, a sort of luminous little worm, gelatinous and without color, of the thickness of a hair, and whose length is not more than the seven-one-thousandths of an inch. These insects adhere to one another sometimes for several leagues."

"Several leagues!" exclaimed Conseil.

"Yes, my boy; and you need not try to compute the number of these infusoria. You will not be able; for, if I am not mistaken, ships have floated on these milk seas for more than forty miles."

Toward midnight the sea suddenly resumed its usual color; but behind us, even to the limits of the horizon, the sky reflected the whitened waves, and for a long time seemed impregnated with the vague glimmerings of an aurora borealis.[av]

Chapter II

A Novel Proposal of Captain Nemo's

ON THE 28TH OF February, when at noon the *Nautilus* came to the surface of the sea, in 9° 4' north latitude, there was land in sight about eight miles to westward. The first thing I noticed was a range of mountains about two thousand feet high, the shapes of which were most capricious. On taking the bearings, I knew that we were nearing the island of Ceylon, the pearl which hangs from the lobe of the Indian Peninsula.

Captain Nemo and his second appeared at this moment. The captain glanced at the map. Then, turning to me, said:

> "The island of Ceylon, noted for its pearl-fisheries. Would you like to visit one of them, M. Aronnax?"

"Certainly, captain."

"Well, the thing is easy. Though if we see the fisheries, we shall not see the fishermen. The annual exportation has not yet begun. Never mind, I will give orders to make for the Gulf of Manaar, where we shall arrive in the night."

The captain said something to his second, who immediately went out. Soon the *Nautilus* returned to her native element, and the manometer showed that she was about thirty feet deep.

"Well, sir," said Captain Nemo, "you and your companions shall visit the Bank of Manaar, and if by chance some fisherman should be there, we shall see him at work."

"Agreed, captain!"

"By the bye, M. Aronnax, you are not afraid of sharks?"

"Sharks!" exclaimed I.

This question seemed a very hard one.

"Well?" continued Captain Nemo.

"I admit, captain, that I am not yet very familiar with that kind of fish."

"We are accustomed to them," replied Captain Nerno, "and in time you will be too. However, we shall be armed, and on the road we may be able to

hunt some of the tribe. It is interesting. So, till tomorrow, sir, and early."

This said in a careless tone, Captain Nemo left the saloon. Now, if you were invited to hunt the bear in the mountains of Switzerland, what would you say? "Very well! To-morrow we will go and hunt the bear." If you were asked to hunt the lion in the plains of Atlas, or the tiger in the Indian jungles, what would you say? "Ha! ha! it seems we are going to hunt the tiger or the lion!" But when you are invited to hunt the shark in its natural element, you would perhaps reflect before accepting the invitation. As for myself, I passed my hand over my forehead, on which stood large drops of cold perspiration. "Let us reflect," said 1, "and take our time. Hunting otters in submarine forests, as we did in the island of Crespo, will pass; but going up and down at the bottom of the sea, where one is almost certain to meet sharks, is quite another thing! I know well that in certain countries, particularly in the Andaman Islands, the Negroes never hesitate to attack them with a dagger in one hand and a running noose in the other; but I also know that few who affront those creatures ever return alive. However, I am not a negro, and, if I were, I think a little hesitation in this case would not be ill-timed."

At this moment, Conseil and the Canadian entered, quite composed, and even joyous. They knew not what awaited them.

"Faith, sir," said Ned Land, "your Captain Nemo—the devil take him—has just made us a very pleasant offer!"

"Ah!" said I. "You know?"

"If agreeable to you, sir," interrupted Conseil, "the commander of the *Nautilus* has invited us to visit the magnificent Ceylon fisheries to-morrow, in your company; he did it kindly, and behaved like a real gentleman."

"He said nothing more?"

"Nothing more, sir, except that he had already spoken to you of this little walk."

"Sir," said Conseil, "would you give us some details of the pearl-fishery?"

"As to the fishing itself," I asked, "or the incidents—which?"

"On the fishing," replied the Canadian; "before entering upon the ground, it is as well to know something about it."

"Very well; sit down, my friends, and I will teach you."

Ned and Conseil seated themselves on an ottoman, and the first thing the Canadian asked was:

"Sir, what is a pearl?"

"My worthy Ned," I answered, "to the poet, a pearl is a tear of the sea; to the Orientals, it is a drop of dew solidified; to the ladies, it is a jewel of an oblong shape, of a brilliancy of mother-of-pearl substance, which they wear on

their fingers, their necks, or their ears; for the chemist, it is a mixture of phosphate and carbonate of lime, with a little gelatine; and lastly, for naturalists, it is simply a morbid secretion of the organ that produces the mother-of-pearl among certain bivalves."

"Branch of molluska," said Conseil, "class of acephali, order of testacea."

"Precisely so, my learned Conseil, and, among these testacea, the earshell, the tridacnæ, the turbots—in a word, all those which secrete mother-of-pearl, that is, the blue, bluish, violet, or white substance which lines the interior of their shells, are capable of producing pearls."

"Mussels too?" asked the Canadian.

"Yes, mussels of certain waters in Scotland, Wales, Ireland, Saxony, Bohemia, and France."

"Good! For the future I shall pay attention," replied the Canadian.

"But," I continued, "the particular mollusk which secretes the pearl is the *pearl-oyster,* the *Meleagrina margaritifera,* that precious pintadine. The pearl is nothing but a nacreous formation, deposited in a globular form, either adhering to the oyster shell, or buried in the folds of the creature. On the shell it is fast; in the flesh it is loose; but always has for a kernel a small, hard substance, maybe a barren egg, maybe a grain of sand, around which the pearly matter deposits itself year after year successively, and by thin concentric layers."

"Are many pearls found in the same oyster?" asked Conseil.

"Yes, my boy. There are some pintadines a perfect casket. One oyster has been mentioned, though I allow myself to doubt it, as having contained no less than a hundred and fifty sharks."

"A hundred and fifty sharks!" exclaimed Ned Land.

"Did I say sharks?" said I hurriedly. "I meant to say a hundred and fifty pearls. Sharks would not be sense."

"Certainly not," said Conseil; "but will you tell us now by what means they extract these pearls?"

"They proceed in various ways. When they adhere to the shell, the fishermen often pull them off with pinchers; but the most common way is to lay the pintadines on mats of the seaweed which covers the banks. Thus they die in the open air; and at the end of ten days they are in a forward state of decomposition. They are then plunged into large reservoirs of seawater; then they are opened and washed. Now begins the double work of the sorters. First they separate the layers of pearls, known in commerce by the name of bastard whites and bastard blacks, which are delivered in boxes of two hundred and fifty and three hundred pounds each. Then they take the parenchyma of the oyster, boil it, and pass it through a sieve in order to extract the very smallest

pearls."

"The price of these pearls varies according to their size?' asked Conseil.

"Not only according to their size," I answered, "but also according to their shape, their water (that is, their color), and their luster; that is, that bright and diapered sparkle which make them so charming to the eye. The most beautiful are called virgin pearls or paragons. They are formed alone in the tissue of the mollusk, are white, often opaque, and sometimes have the transparency of an opal; they are generally round or oval. The round are made into bracelets, the oval into pendants; and, being more precious, are sold singly. Those adhering to the shell of the oyster are more irregular in shape, and are sold by weight. Lastly, in a lower order are classed those small pearls known under the name of seed-pearls; they are sold by measure, and are especially used in embroidery for church ornaments."

"But," said Conseil, "is this pearl-fishing dangerous?"

"No," I answered quickly; "particularly if certain precautions are taken."

"What does one risk in such a calling?" said Ned Land. "The swallowing of some mouthfuls of sea-water?"

"As you say, Ned. By the bye," said I, trying to take Captain Nemo's careless tone, "are you afraid of sharks, brave Ned?"

"I!" replied the Canadian. "A harpooner by profession! It is my trade to make light of them."

"But," said I, "it is not a question of fishing for them with an iron swivel, hoisting them into the vessel, cutting off their tails with a blow of the chopper, ripping them up, and throwing their hearts into the sea!"

"Then, it is a question of——"

"Precisely."

"In the water?"

"In the water."

"Faith, with a good harpoon! You know, sir, these sharks are ill-fashioned beasts. They must turn on their bellies to seize you, and in that time——"

Ned Land had a way of saying "seize" which made my blood run cold.

"Well, and you, Conseil, what do you think of sharks?"

"Me!" said Conseil. "I will be frank, sir."

"So much the better," thought I.

"If you, sir, mean to face the sharks, I do not see why your faithful servant should not face them with you."

Chapter III

A Pearl of Ten Millions

THE NEXT MORNING AT four o'clock I was awakened by the steward, whom Captain Nemo had placed at my service. I rose hurriedly, dressed, and went into the saloon.

Captain Nemo was awaiting me.

"M. Aronnax," said he, "are you ready to start?"

"I am ready."

"Then, please to follow me."

"And my companions, captain?"

"They have been told, and are waiting."

"Are we not to put on our diver's dresses?" asked I.

"Not yet. I have not allowed the *Nautilus* to come too near this coast, and we are some distance from the Manaar Bank; but the boat is ready, and will take us to the exact point of disembarking, which will save us a long way. It carries our diving apparatus, which we will put on when we begin our submarine journey."

Captain Nemo conducted me to the central staircase, which led on to the platform. Ned and Conseil were already there, delighted at the idea of the "pleasure party" which was preparing. Five sailors from the *Nautilus,* with their oars, waited in the boat, which had been made fast against the side.

The night was still dark. Layers of clouds covered the sky, allowing but few stars to be seen. I looked on the side where the land lay, and saw nothing but a dark line inclosing three parts of the horizon, from southwest to northwest. The *Nautilus,* having returned during the night up the western coast of Ceylon, was now west of the bay, or rather gulf, formed by the mainland and the island of Manaar. There, under the dark waters, stretched the pintadine bank, an inexhaustible field of pearls, the length of which is more than twenty miles.

Captain Nemo, Ned Land, Conseil, and I took our places in the stern of the boat. The master went to the tiller; his four companions leaned on their oars,

the painter was cast off, and we sheered off.

The boat went toward the south; the oarsmen did not hurry. I noticed that their strokes, strong in the water, only followed each other every ten seconds, according to the method generally adopted in the navy. While the craft was running by its own velocity, the liquid drops struck the dark depths of the waves crisply like spats of melted lead. A little billow, spreading wide, gave a slight roll to the boat, and some samphire reeds flapped before it.

We were silent. What was Captain Nemo thinking of? Perhaps of the land he was approaching, and which he found too near to him, contrary to the Canadian's opinion, who thought it too far off. As to Conseil, he was merely there from curiosity.

About half-past five, the first tints on the horizon showed the upper line of coast more distinctly. Flat enough in the east, it rose a little to the south. Five miles still lay between us, and it was indistinct, owing to the mist on the water. At six o'clock it became suddenly daylight, with that rapidity peculiar to tropical regions, which know neither dawn nor twilight. The solar rays pierced the curtain of clouds piled up on the eastern horizon, and the radiant orb rose rapidly. I saw land distinctly, with a few trees scattered here and there. The boat neared Manaar Island, which was rounded to the south. Captain Nemo rose from his seat and watched the sea.

At a sign from him the anchor was dropped, but the chain scarcely ran, for it was little more than a yard deep, and this spot was one of the highest points of the bank of pintadines.

"Here we are, M. Aronnax," said Captain Nemo. "You see that inclosed bay? Here, in a month, will be assembled the numerous fishing-boats of the exporters, and these are the waters their divers will ransack so boldly. Happily, this bay is well situated for that kind of fishing. It is sheltered from the strongest winds; the sea is never very rough here, which makes it favorable for the diver's work. We will now put on our dresses, and begin our walk."

I did not answer, and while watching the suspected waves, began with the help of the sailors to put on my heavy sea-dress. Captain Nemo and my companions were also dressing. None of the *Nautilus* men were to accompany us on this new excursion.

Soon we were enveloped to the throat in India-rubber clothing; the air apparatus fixed to our backs by braces. As to the Ruhmkorff apparatus, there was no necessity for it. Before putting my head into the copper cap, I had asked the question of the captain.

"They would be useless," he replied. "We are going to no great depth, and the solar rays will be enough to light our walk. Besides, it would not be prudent to carry the electric light in these waters; its brilliancy might attract some of the dangerous inhabitants of the coast most inopportunely."

As Captain Nemo pronounced these words, I turned to Conseil and Ned Land. But my two friends had already incased their heads in the metal cap, and they could neither hear nor answer.

One last question remained to ask of Captain Nemo.

"And our arms?" asked I. "Our guns?"

"Guns! What for? Do not mountaineers attack the bear with a dagger in their hand, and is not steel surer than lead? Here is a strong blade, put it in your belt, and we start."

I looked at my companions; they were armed like us, and, more than that, Ned Land was brandishing an enormous harpoon, which he had placed in the boat before leaving the *Nautilus*.

Then, following the captain's example, I allowed myself to be dressed in the heavy copper helmet, and our reservoirs of air were at once in activity. An instant after, we were landed, one after the other, in about two feet of water upon an even sand. Captain Nemo made a sign with his hand, and we followed him by a gentle declivity till we disappeared under the waves.

Over our feet, like coveys of snipe in a bog, rose shoals of fish, of the genus monoptera, which have no other fins but their tail. I recognized the Javanese, a real serpent two and a half feet long, of a livid color underneath, and which might easily be mistaken for a conger eel if it was not for the golden stripes on its sides. In the genus stromateus, whose bodies are very flat and oval, I saw some of the most brilliant colors, carrying their dorsal fin like a scythe; an excellent eating fish, which, dried and pickled, is known by the name of karawade; then some tranquebars, belonging to the genus apsiphoroides, whose body is covered with a shell cuirass of eight longitudinal plates.

The heightening sun lit the mass of waters more and more. The soil changed by degrees. To the fine sand succeeded a perfect causeway of boulders, covered with a carpet of mollusks and zoöphytes. Among the specimens of these branches I noticed some placenæ, with thin, unequal shells, a kind of ostracion peculiar to the Red Sea and the Indian Ocean; some orange lucinae with rounded shells; rock-fish three feet and a half long, which raised themselves under the waves like hands ready to seize one. There were also some panopyres, slightly luminous; and lastly, some oculines, like magnificent fans, forming one of the richest vegetations of these seas.

In the midst of these living plants, and under the arbors of the hydrophytes, were layers of clumsy articulates, particularly some raninæ, whose carapace formed a slightly rounded triangle; and some horrible-looking parthenopes.

At about seven o'clock we found ourselves at last surveying the oyster-banks, on which the pearl-oysters are reproduced by millions.

Captain Nemo pointed with his hand to the enormous heap of oysters; and I could well understand that this mine was inexhaustible, for nature's creative power is far beyond man's instinct of destruction. Ned Land, faithful to his instinct, hastened to fill a net which he carried by his side with some of the finest specimens. But we could not stop. We must follow the captain, who seemed to guide himself by paths known only to himself. The ground was sensibly rising, and sometimes, on holding up my arm, it was above the surface of the sea. Then the level of the bank would sink capriciously. Often we rounded high rocks scarped into pyramids. In their dark fractures huge crustacea, perched upon their high claws like some war-machine, watched us with fixed eyes, and under our feet crawled various kinds of annelides.

At this moment there opened before us a large grotto, dug in a picturesque heap of rocks, and carpeted with all the thick warp of the submarine flora. At first it seemed very dark to me. The solar rays seemed to be extinguished by successive gradations, until its vague transparency became nothing more than drowned light. Captain Nemo entered; we followed. My eyes soon accustomed themselves to this relative state of darkness. I could distinguish the arches springing capriciously from natural pillars, standing broad upon their granite base, like the heavy columns of Tuscan architecture. Why had our incomprehensible guide led us to the bottom of this submarine crypt? I was soon to know. After descending a rather sharp declivity, our feet trod the bottom of a kind of circular pit. There Captain Nemo stopped, and with his hand indicated an object I had not yet perceived. It was an oyster of extraordinary dimensions, a gigantic tridacne, a goblet which could have contained a whole lake of holy water, a basin the breadth of which was more than two yards and a half, and consequently larger than that ornamenting the saloon of the *Nautilus*. I approached this extraordinary mollusk. It adhered by its byssus to a table of granite, and there, isolated, it developed itself in the calm waters of the grotto. I estimated the weight of this tridacne at 600 pounds. Such an oyster would contain thirty pounds of meat; and one must have the stomach of a Gargantua to demolish some dozens of them.

Captain Nemo was evidently acquainted with the existence of this bivalve, and seemed to have a particular motive in verifying the actual state of this tridacne. The shells were a little open; the captain came near, and put his dagger between to prevent them from closing; then with his hand he raised the membrane with its fringed edges, which formed a cloak for the creature. There, between the folded plaits, I saw a loose pearl, whose size equaled that of a cocoanut. Its globular shape, perfect clearness, and admirable luster made it altogether a jewel of inestimable value. Carried away by my curiosity I stretched out my hand to seize it, weigh it, and touch it; but the captain stopped me, made a sign of refusal, and quickly withdrew his dagger, and the two shells closed suddenly. I then understood Captain Nemo's intention. In leaving this pearl hidden in the mantle of the tridacne, he was allowing it to grow slowly. Each year the secretions of the mollusk would add new concentric circles. I estimated its value at £500,000 at least.

After ten minutes Captain Nemo stopped suddenly. I thought he had halted

previously to returning. No; by a gesture he bade us crouch beside him in a deep fracture of the rock, his hand pointed to one part of the liquid mass, which I watched attentively.

About five yards from me a shadow appeared and sank to the ground. The disquieting idea of sharks shot through my mind, but I was mistaken; and once again it was not a monster of the ocean that we had anything to do with.

It was a man, a living man, an Indian, a fisherman, a poor devil, who, I suppose, had come to glean before the harvest. I could see the bottom of his canoe anchored some feet above his head. He dived and went up successively. A stone held between his feet, cut in the shape of a sugar-loaf, while a rope fastened him to his boat, helped him to descend more rapidly. This was all his apparatus. Reaching the bottom about five yards deep, he went on his knees and filled his bag with oysters picked up at random. Then he went up, emptied it, pulled up his stone, and began the operation once more, which lasted thirty seconds.

The diver did not see us. The shadow of the rock hid us from sight. And how should this poor Indian ever dream that men, beings like himself, should be there under the water watching his movements, and losing no detail of the fishing? Several times he went up in this way, and dived again. He did not carry away more than ten at each plunge, for he was obliged to pull them from the bank to which they adhered by means of their strong byssus. And how many of those oysters for which he risked his life had no pearl in them! I watched him closely; his maneuvers were regular, and for the space of half an hour, no danger appeared to threaten him.

I was beginning to accustom myself to the sight of this interesting fishing, when suddenly, as the Indian was on the ground, I saw him make a gesture of terror, rise, and make a spring to return to the surface of the sea.

I understood his dread. A gigantic shadow appeared just above the unfortunate diver. It was a shark of enormous size advancing diagonally, his eyes on fire, and his jaws open. I was mute with horror and unable to move.

The voracious creature shot toward the Indian, who threw himself on one side in order to avoid the shark's fins; but not its tail, for it struck his chest, and stretched him on the ground.

This scene lasted but a few seconds; the shark returned, and, turning on his back, prepared himself for cutting the Indian in two, when I saw Captain Nemo rise suddenly, and then, dagger in hand, walk straight to the monster, ready to fight face to face with him. The very moment the shark was going to snap the unhappy fisherman in two, he perceived his new adversary, and, turning over, made straight toward him.

I can still see Captain Nemo's position. Holding himself well together, he waited for the shark with admirable coolness; and, when it rushed at him, threw himself on one side with wonderful quickness, avoiding the shock, and burying his dagger deep into its side. But it was not all over. A terrible combat

ensued.

The shark had seemed to roar, if I might say so. The blood rushed in torrents from its wound. The sea was dyed red, and through the opaque liquid I could distinguish nothing more. Nothing more, until the moment when, like lightning, I saw the undaunted captain hanging on to one of the creature's fins, struggling, as it were, hand to hand with the monster, and dealing successive blows at his enemy, yet still unable to give a decisive one.

The shark's struggles agitated the water with such fury that the rocking threatened to upset me.

I wanted to go to the captain's assistance, but, nailed to the spot with horror, I could not stir.

I saw the haggard eye; I saw the different phases of the fight. The captain fell to the earth, upset by the enormous mass which leaned upon him. The shark's jaws opened wide, like a pair of factory shears, and it would have been all over with the captain, but, quick as thought, harpoon in hand, Ned Land rushed toward the shark and struck it with its sharp point.

The waves were impregnated with a mass of blood. They rocked under the shark's movements, which beat them with indescribable fury. Ned Land had not missed his aim. It was the monster's death-rattle. Struck to the heart, it struggled in dreadful convulsions, the shock of which overthrew Conseil.

But Ned Land had disentangled the captain, who, getting up without any wound, went straight to the Indian, quickly cut the cord which held him to the stone, took him in his arms, and, with a sharp blow of his heel, mounted to the surface.

We all three followed in a few seconds, saved by a miracle, and reached the fisherman's boat.

Captain Nemo's first care was to recall the unfortunate man to life again. I did not think he could succeed. I hoped so, for the poor creature's immersion was not long; but the blow from the shark's tail might have been his death-blow.

Happily, with the captain's and Conseil's sharp friction, I saw consciousness return by degrees. He opened his eyes. What was his surprise, his terror even, at seeing four great copper heads leaning over him! And, above all, what must he have thought when Captain Nemo, drawing from the pocket of his dress a bag of pearls, placed it in his hand! This munificent charity from the man of the waters to the poor Cingalese was accepted with a trembling hand. His wondering eyes showed that he knew not to what superhuman beings he owed both fortune and life.

At a sign from the captain we regained the bank, and following the road already traversed, came in about half an hour to the anchor which held the canoe of the *Nautilus* to the earth.

Once on board, we each, with the help of the sailors, got rid of the heavy copper helmets.

Captain Nemo's first word was to the Canadian.

"Thank you, Master Land," said he.

"It was in revenge, captain," replied Ned Land. "I owed you that."

A ghastly smile passed across the captain's lips, and that was all.

"To the *Nautilus,"* said he.

The boat flew over the waves. Some minutes after we met the shark's dead body floating. By the black marking of the extremity of its fins, I recognized the terrible melanopteron of the Indian seas, of the species of shark properly so called. It was more than twenty-five feet long; its enormous mouth occupied one-third of its body. It was an adult, as was known by its six rows of teeth placed in an isosceles triangle in the upper jaw.

Conseil looked at it with scientific interest, and I am sure that he placed it, and not without reason, in the cartilaginous class, of the chondropterygian order, with fixed gills, of the selacian family, in the genus of the sharks.

While I was contemplating this inert mass, a dozen of these voracious beasts appeared round the boat, and, without noticing us, threw themselves upon the dead body and fought with one another for the pieces.

At half-past eight we were again on board the *Nautilus.* There I reflected on the incidents which had taken place in our excursion to the Manaar Bank.

Two conclusions I must inevitably draw from it—one bearing upon the unparalleled courage of Captain Nemo, the other upon his devotion to a human being, a representative of that race from which he fled beneath the sea. Whatever he might say, this strange man had not yet succeeded in entirely crushing his heart.

When I made this observation to him, he answered in a slightly moved tone:

"That Indian, sir, is an inhabitant of an oppressed country; and I am still, and shall be, to my last breath, one of them!"

Chapter IV

The Red Sea

IN THE COURSE OF the day of the 29th of January, the island of Ceylon disappeared under the horizon, and the *Nautilus,* at a speed of twenty miles an hour, slid into the labyrinth of canals which separate the Maldives from the Laccadives. It coasted even the island of Kiltan, a land originally madreporic, discovered by Vasco da Gama in 1499, and one of the nineteen principal islands of the Laccadive Archipelago, situated between 10° and 14° 30' north latitude, and 69° 50' 72" east longitude.

We had made 16,220 miles, or 7,500 (French) leagues, from our starting-point in the Japanese seas.

The next day (30th of January), when the *Nautilus* went to the surface of the ocean, there was no land in sight. Its course was N.N.E., in the direction of the Sea of Oman, between Arabia and the Indian Peninsula, which serves as an outlet to the Persian Gulf. It was evidently a block without any possible egress. Where was Captain Nemo taking us to? I could not say. This, however, did not satisfy the Canadian, who that day came to me asking where we were going.

"We are going where our captain's fancy takes us, Master Ned."

"His fancy cannot take us far, then," said the Canadian. "The Persian Gulf has no outlet; and if we do go in, it will not be long before we are out again."

"Very well, then, we will come out again, Master Land; and if after the Persian Gulf the *Nautilus* would like to visit the Red Sea, the Straits of Bab-el-mandeb are there to give us entrance."

"I need not tell you, sir," said Ned Land, "that the Red Sea is as much closed as the gulf, as the Isthmus of Suez is not yet cut; and if it was, a boat as mysterious as ours would not risk itself in a canal cut with sluices. And again the Red Sea is not the road to take us back to Europe."

"But I never said we were going back to Europe."

"What do you suppose, then?"

"I suppose that after visiting the curious coasts of Arabia and Egypt, the *Nautilus* will go down the Indian Ocean again, perhaps cross the Channel of Mozambique, perhaps off the Mascarenhas, so as to gain the Cape of Good Hope."

“And once at the Cape of Good Hope?” asked the Canadian, with peculiar emphasis.

“Well, we shall penetrate into that Atlantic which we do not yet know. Ah! friend Ned, you are getting tired of this journey under the sea: you are surfeited with the incessantly varying spectacle of submarine wonders. For my part, I shall be sorry to see the end of a voyage which it is given to so few men to make.”

For four days, till the 3d of February, the *Nautilus* scoured the Sea of Oman, at various speeds and at various depths. It seemed to go at random, as if hesitating as to which road it should follow, but we never passed the Tropic of Cancer.

In quitting this sea we sighted Muscat for an instant, one of the most important towns of the country of Oman. I admired its strange aspect, surrounded by black rocks upon which its white houses and forts stood in relief. I saw the rounded domes of its mosques, the elegant points of its minarets, its fresh and verdant terraces. But it was only a vision! The *Nautilus* soon sank under the waves of that part of the sea.

We passed along the Arabian coast of Mahrah and Hadramaut, for a distance of six miles, its undulating line of mountains being occasionally relieved by some ancient ruin. The 5th of February we at last entered the Gulf of Aden, a perfect funnel introduced into the neck of Bab-el-mandeb, through which the Indian waters entered the Red Sea.

The 6th of February, the *Nautilus* floated in sight of Aden, perched upon a promontory which a narrow isthmus joins to the mainland, a kind of inaccessible Gibraltar, the fortifications of which were rebuilt by the English after taking possession in 1839. I caught a glimpse of the octagon minarets of this town, which was at one time, according to the historian Edrisi, the richest commercial magazine on the coast.

I certainly thought that Captain Nemo, arrived at this point, would back out again; but I was mistaken, for he did no such thing, much to my surprise.

The next day, the 7th of February, we entered the Straits of Bab-el-mandeb, the name of which, in the Arab tongue, means “The gate of tears.”

To twenty miles in breadth, it is only thirty-two in length. And for the *Nautilus,* starting at full speed, the crossing was scarcely the work of an hour. But I saw nothing, not even the island of Perim, with which the British government has fortified the position of Aden. There were too many English or French steamers of the line of Suez to Bombay, Calcutta to Melbourne, and from Bourbon to the Mauritius, furrowing this narrow passage, for the *Nautilus* to venture to show itself. So it remained prudently below. At last, about noon, we were in the waters of the Red Sea.

I would not even seek to understand the caprice which had decided Captain Nemo upon entering the gulf. But I quite approved of the *Nautilus*

entering it. Its speed was lessened: sometimes it kept on the surface, sometimes it dived to avoid a vessel, and thus I was able to observe the upper and lower parts of this curious sea.

The 8th of February, from the first dawn of day, Mocha came in sight, now a ruined town, whose walls would fall at a gunshot, yet which shelters here and there some verdant date-trees; once an important city, containing six public markets and twenty-six mosques, and whose walls, defended by fourteen forts, formed a girdle of two miles in circumference.

The *Nautilus* then approached the African shore, where the depth of the sea was greater. There, between two waters clear as crystal, through the open panels we were allowed to contemplate the beautiful bushes of brilliant coral, and large blocks of rock clothed with a splendid fur of green algæ and fuci. What an indescribable spectacle, and what variety of sites and landscapes along these sand-banks and volcanic islands which bound the Lybian coast! But where these shrubs appeared in all their beauty was on the eastern coast, which the *Nautilus* soon gained. It was on the coast of Tehama, for there not only did this display of zoöphytes flourish beneath the level of the sea, but they also formed picturesque interlacings which unfolded themselves about sixty feet above the surface, more capricious but less highly colored than those whose freshness was kept up by the vital power of the waters.

What charming hours I passed thus at the window of the saloon! What new specimens of submarine flora and fauna did I admire under the brightness of our electric lantern!

There grew sponges of all shapes, pediculated, foliated, globular, and digital. They certainly justified the names of baskets, cups, distaffs, elk‘s-horns, lion’s-feet, peacock‘s-tails, and Neptune’s-gloves, which have been given to them by the fishermen, greater poets than the savants.

Other zoöphytes which multiply near the sponges consist principally of medusæ of a most elegant kind. The mollusks were represented by varieties of the calmar (which, according to Orbigny, are peculiar to the Red Sea); and reptiles by the virgata turtle, of the genus of cheloniæ, which furnished a wholesome and delicate food for our table.

As to the fish, they were abundant and often remarkable. The following are those which the nets of the *Nautilus* brought more frequently on board:

Rays of a red-brick color, with bodies marked with blue spots, and easily recognizable by their double spikes; some superb caranxes, marked with seven transverse bands of jet-black, blue and yellow fins, and gold and silver scales; mullets with yellow heads; gobies, and a thousand other species, common to the ocean which we had just traversed.

The 9th of February, the *Nautilus* floated in the broadest part of the Red Sea, which is comprised between Souakin, on the west coast, and Koomfidah, on the east coast, with a diameter of ninety miles.

That day at noon, after the bearings were taken, Captain Nemo mounted the platform, where I happened to be, and I was determined not to let him go down again without at least pressing him regarding his ulterior projects. As soon as he saw me he approached, and graciously offered me a cigar.

"Well, sir, does this Red Sea please you? Have you sufficiently observed the wonders it covers, its fishes, its zoöphytes, its parterres of sponges, and its forests of coral? Did you catch a glimpse of the towns on its borders?"

"Yes, Captain Nemo," I replied; "and the *Nautilus* is wonderfully fitted for such a study. Ah! it is an intelligent boat!"

"Yes, sir, intelligent and invulnerable. It fears neither the terrible tempests of the Red Sea, nor its currents, nor its sand-banks."

"Certainly," said I, "this sea is quoted as one of the worst, and in the time of the ancients, if I am not mistaken, its reputation was detestable."

"Detestable, M. Aronnax. The Greek and Latin historians do not speak favorably of it, and Strabo[aw] says it is very dangerous during the Etesian winds,[ax] and in the rainy season. The Arabian Edrisi portrays it under the name of the Gulf of Colzoum, and relates that vessels perished there in great numbers on the sand-banks, and that no one would risk sailing in the night. It is, he pretends, a sea subject to fearful hurricanes, strewn with inhospitable islands, and 'which offers nothing good either on its surface or in its depths.' Such, too, is the opinion of Arrian, Agatharcides, and Artemidorus."

"One may see," I replied, "that these historians never sailed on board the *Nautilus."*

"Just so," replied the captain, smiling; "and in that respect moderns are not more advanced than the ancients. It required many ages to find out the mechanical power of steam. Who knows if, in another hundred years, we may not see a second *Nautilus?* Progress is slow, M. Aronnax."

"It is true," I answered; "your boat is at least a century before its time, perhaps an era. What a misfortune that the secret of such an invention should die with its inventor!"

Captain Nemo did not reply. After some minutes' silence he continued:

"You were speaking of the opinions of ancient historians upon the dangerous navigation of the Red Sea."

"It is true," said I; "but were not their fears exaggerated?"

"Yes and no, M. Aronnax," replied Captain Nemo, who seemed to know the Red Sea by heart. "That which is no longer dangerous for a modern vessel, well rigged, strongly built, and master of its own course, thanks to obedient steam, offered all sorts of perils to the ships of the ancients. Picture to yourself those first navigators venturing in ships made of planks sewn with the cords of the palm trees, saturated with the grease of the seadog, and covered with

powdered resin! They had not even instruments wherewith to take their bearings, and they went by guess among currents of which they scarcely knew anything. Under such conditions shipwrecks were, and must have been, numerous. But in our time, steamers running between Suez and the South Seas have nothing more to fear from the fury of this gulf, in spite of contrary trade winds. The captain and passengers do not prepare for their departure by offering propitiatory sacrifices; and, on their return, they no longer go ornamented with wreaths and gilt fillets to thank the gods in the neighboring temple."

"I agree with you," said I; "and steam seems to have killed all gratitude in the hearts of sailors. But, captain, since you seem to have especially studied this sea, can you tell me the origin of its name?"

"There exist several explanations on the subject, M. Aronnax. Would you like to know the opinion of a chronicler of the fourteenth century?"

"Willingly."

"This fanciful writer pretends that its name was given to it after the passage of the Israelites, when Pharaoh perished in the waves which closed at the voice of Moses."

"A poet's explanation, Captain Nemo," I replied; "but I cannot content myself with that. I ask you for your personal opinion."

"Here it is, M. Aronnax. According to my idea, we must see in this appellation of the Red Sea a translation of the Hebrew word 'Edom';[ay] and if the ancients gave it that name, it was on account of the particular color of its waters."

"But up to this time I have seen nothing but transparent waves and without any particular color."

"Very likely; but as we advance to the bottom of the gulf, you will see this singular appearance. I remember seeing the Bay of Tor entirely red, like a sea of blood."

"And you attribute this color to the presence of a microscopic seaweed?"

"Yes; it is a mucilaginous purple matter, produced by the restless little plants known by the name of trichodesmia, and of which it requires 40,000 to occupy the space of a square 0.04 of an inch. Perhaps we shall meet some when we get to Tor."

"So, Captain Nemo, it is not the first time you have overrun the Red Sea on board the *Nautilus?"*

"No, sir."

"As you spoke a while ago of the passage of the Israelites and of the catastrophe to the Egyptians, I will ask whether you have met with traces

under the water of this great historical fact?"

"No, sir; and for a very good reason."

"What is it?"

"It is, that the spot where Moses and his people passed is now so blocked up with sand that the camels can barely bathe their legs there. You can well understand that there would not be water enough for my *Nautilus."*

"And the spot?" I asked.

"The spot is situated a little above the Isthmus of Suez, in the arm which formerly made a deep estuary when the Red Sea extended to the Salt Lakes. Now, whether this passage were miraculous or not, the Israelites, nevertheless, crossed there to reach the Promised Land, and Pharaoh's army perished precisely on that spot; and I think that excavations made in the middle of the sand would bring to light a large number of arms and instruments of Egyptian origin."

"That is evident," I replied; "and for the sake of archæologists let us hope that these excavations will be made sooner or later, when new towns are established on the isthmus, after the construction of the Suez Canal;[32] a canal, however, very useless to a vessel like the *Nautilus."*

"Very likely; but useful to the whole world," said Captain Nemo. "The ancients well understood the utility of a communication between the Red Sea and the Mediterranean for their commercial affairs; but they did not think of digging a canal direct, and took the Nile as an intermediate. Very probably the canal which united the Nile to the Red Sea was begun by Sesostris, if we may believe tradition. One thing is certain, that in the year 615 before Jesus Christ, Necos undertook the works of an alimentary canal to the waters of the Nile, across the plain of Egypt, looking toward Arabia. It took four days to go up this canal, and it was so wide that two triremes could go abreast. It was carried on by Darius, the son of Hystaspes, and probably finished by Ptolemy II. Strabo saw it navigated; but its decline from the point of departure, near Bubastes, to the Red Sea was so slight that it was only navigable for a few months in the year. This canal answered all commercial purposes to the age of Antoninus, when it was abandoned and blocked up with sand. Restored by order of the Caliph Omar, it was definitively destroyed in 761 or 762 by Caliph Al-Mansor, who wished to prevent the arrival of provisions to Mohammed-ben-Abdallah, who had revolted against him. During the expedition into Egypt, your General Bonaparte discovered traces of the works in the Desert of Suez; and, surprised by the tide, he nearly perished before regaining Hadjaroth, at the very place where Moses had encamped three thousand years before him."

"Well, captain, what the ancients dared not undertake, this junction between the two seas, which will shorten the road from Cadiz to India, M. Lesseps has succeeded in doing; and before long he will have changed Africa into an immense island."

“Yes, M. Aronnax, you have the right to be proud of your countryman. Such a man brings more honor to a nation than great captains. He began, like so many others, with disgust and rebuffs; but he has triumphed, for he has the genius of will. And it is sad to think that a work like that, which ought to have been an international work, and which would have sufficed to make a reign illustrious, should have succeeded by the energy of one man. All honor to M. Lesseps!”

“Yes, honor to the great citizen!” I replied, surprised by the manner in which Captain Nemo had just spoken.

“Unfortunately,” he continued, “I cannot take you through the Suez Canal; but you will be able to see the long jetty of Port Said after tomorrow, when we shall be in the Mediterranean.”

“The Mediterranean!” I exclaimed.

“Yes, sir; does that astonish you?”

“What astonishes me is to think that we shall be there the day after tomorrow.”

“Indeed?”

“Yes, captain, although by this time I ought to have accustomed myself to be surprised at nothing since I have been on board your boat.”

“But the cause of this surprise?”

“Well! it is the fearful speed you will have to put on the *Nautilus,* if the day after to-morrow she is to be in the Mediterranean, having made the round of Africa, and doubled the Cape of Good Hope!”

“Who told you that she would make the round of Africa, and double the Cape of Good Hope, sir?”

“Well, unless the *Nautilus* sails on dry land, and passes above the isthmus ____”

“Or beneath it, M. Aronnax.”

“Beneath it!”

“Certainly,” replied Captain Nemo quietly. “A long time ago nature made under this tongue of land what man has this day made on its surface.”

“What! Such a passage exists?”

“Yes; a subterranean passage, which I have named the Arabian Tunnel. It takes us beneath Suez, and opens into the Gulf of Pelusium.”

“But this isthmus is composed of nothing but quicksands.”

“To a certain depth. But at fifty-five yards only, there is a solid layer of

rock."

"Did you discover this passage by chance?" I asked, more and more surprised.

"Chance and reasoning, sir; and by reasoning even more than by chance. Not only does this passage exist, but I have profited by it several times. Without that I should not have ventured this day into the impassable Red Sea. I noticed that in the Red Sea and in the Mediterranean there existed a certain number of fishes of a kind perfectly identical—ophidia, fiatoles, girelles, and exocœti. Certain of that fact, I asked myself, was it possible that there was no communication between the two seas? If there was, the subterranean current must necessarily run from the Red Sea to the Mediterranean, from the sole cause of difference of level. I caught a large number of fishes in the neighborhood of Suez. I passed a copper ring through their tails, and threw them back into the sea. Some months later, on the coast of Syria, I caught some of my fish ornamented with the ring. Thus the communication between the two was proved. I then sought for it with my *Nautilus;* I discovered it, ventured into it, and before long, sir, you too will have passed through my Arabian Tunnel!"

Chapter V

The Arabian Tunnel

THAT SAME EVENING, IN 21° 30’ north latitude, the *Nautilus* floated on the surface of the sea, approaching the Arabian coast. I saw Djeddah, the most important counting-house of Egypt, Syria, Turkey, and India. I distinguished clearly enough its buildings, the vessels anchored at the quays, and those whose draught of water obliged them to anchor in the roads. The sun, rather low on the horizon, struck full on the houses of the town, bringing out their whiteness. Outside, some wooden cabins, and some made of reeds, showed the quarter inhabited by the Bedouins. Soon Djeddah was shut out from view by the shadows of night, and the *Nautilus* found herself under water slightly phosphorescent.

The next day, the 10th of February, we sighted several ships running to windward. The *Nautilus* returned to its submarine navigation; but at noon, when her bearings were taken, the sea being deserted, she rose again to her waterline.

Accompanied by Ned and Conseil, I seated myself on the platform. The coast on the eastern side looked like a mass faintly printed upon a damp fog.

We were leaning on the sides of the pinnace, talking of one thing and another, when Ned Land, stretching out his hand toward a spot on the sea, said:

“Do you see anything there, sir?”

“No, Ned,” I replied; “but I have not your eyes, you know.”

“Look well,” said Ned, “there, on the starboard beam, about the height of the lantern! Do you not see a mass which seems to move?”

“Certainly,” said I, after close attention; “I see something like a long black body on the top of the water.”

And certainly before long the black object was not more than a mile from us. It looked like a great sand-bank deposited in the open sea. It was a gigantic dugong![az]

Ned Land looked eagerly. His eyes shone with covetousness at the sight of the animal. His hand seemed ready to harpoon it. One would have thought he was waiting the moment to throw himself into the sea, and attack it in its

element.

At this instant Captain Nemo appeared on the platform. He saw the dugong, understood the Canadian's attitude, and addressing him, said:

"If you held a harpoon just now, Master Land, would it not burn your hand?"

"Just so, sir."

"And you would not be sorry to go back, for one day, to your trade of a fisherman, and to add this cetacean to the list of those you have already killed?"

"I should not, sir."

"Well, you can try."

"Thank you, sir," said Ned Land, his eyes flaming.

"Only," continued the captain, "I advise you for your own sake not to miss the creature."

"Is the dugong dangerous to attack?" I asked, in spite of the Canadian's shrug of the shoulders.

"Yes," replied the captain; "sometimes the animal turns upon its assailants and overturns their boat. But for Master Land, this danger is not to be feared. His eye is prompt, his arm sure."

At this moment seven men of the crew, mute and immovable as ever, mounted the platform. One carried a harpoon and a line similar to those employed in catching whales. The pinnace was lifted from the bridge, pulled from its socket, and let down into the sea. Six oarsmen took their seats, and the coxswain went to the tiller. Ned, Conseil, and I went to the back of the boat.

"You are not coming, captain?" I asked.

"No, sir, but I wish you good sport."

The boat put off, and lifted by the six rowers, drew rapidly toward the dugong, which floated about two miles from the *Nautilus*.

Arrived some cables' length from the cetacean, the speed slackened, and the oars dipped noiselessly into the quiet waters. Ned Land, harpoon in hand, stood in the fore part of the boat. The harpoon used for striking the whale is generally attached to a very long cord, which runs out rapidly as the wounded creature draws it after him. But here the cord was not more than ten fathoms long, and the extremity was attached to a small barrel, which, by floating, was to show the course the dugong took under the water.

I stood, and carefully watched the Canadian's adversary. This dugong,

which also bears the name of the halicore, closely resembles the manatee; its oblong body terminated in a lengthened tail, and its lateral fins in perfect fingers. Its difference from the manatee consisted in its upper jaw, which was armed with two long and pointed teeth, which formed on each side diverging tusks.

This dugong, which Ned Land was preparing to attack, was of colossal dimensions; it was more than seven yards long.[ba] It did not move, and seemed to be sleeping on the waves, which circumstance made it easier to capture.

The boat approached within six yards of the animal. The oars rested on the rowlocks. I half rose. Ned Land, his body thrown a little back, brandished the harpoon in his experienced hand.

Suddenly a hissing noise was heard, and the dugong disappeared. The harpoon, although thrown with great force, had apparently only struck the water.

“Curse it!” exclaimed the Canadian furiously; “I have missed it!”

“No,” said I; “the creature is wounded—look at the blood; but your weapon has not stuck in his body.”

“My harpoon! My harpoon!” cried Ned Land.

The sailors rowed on, and the coxswain made for the floating barrel. The harpoon regained, we followed in pursuit of the animal.

The latter came now and then to the surface to breathe. Its wound had not weakened it, for it shot onward with great rapidity.

The boat, rowed by strong arms, flew on its track. Several times it approached within some few yards, and the Canadian was ready to strike, but the dugong made off with a sudden plunge, and it was impossible to reach it.

Imagine the passion which excited impatient Ned Land! He hurled at the unfortunate creature the most energetic expletives in the English tongue. For my part I was only vexed to see the dugong escape all our attacks.

We pursued it without relaxation for an hour, and I began to think it would prove difficult to capture, when the animal, possessed with the perverse idea of vengeance, of which he had cause to repent, turned upon the pinnace and assailed us in its turn.

This maneuver did not escape the Canadian.

“Look out!” he cried.

The coxswain said some words in his outlandish tongue, doubtless warning the men to keep on their guard.

The dugong came within twenty feet of the boat, stopped, sniffed the air briskly with its large nostrils (not pierced at the extremity, but in the upper

part of its muzzle). Then taking a spring he threw himself upon us.

The pinnace could not avoid the shock, and half upset, shipped at least two tons of water, which had to be emptied; but thanks to the coxswain, we caught it sideways, not full front, so we were not quite overturned. While Ned Land, clinging to the bows, belabored the gigantic animal with blows from his harpoon, the creature's teeth were buried in the gunwale, and it lifted the whole thing out of the water, as a lion does a roebuck. We were upset over one another, and I know not how the adventure would have ended, if the Canadian, still enraged with the beast, had not struck it to the heart.

I heard its teeth grind on the iron plate, and the dugong disappeared, carrying the harpoon with him. But the barrel soon returned to the surface, and shortly after the body of the animal, turned on its back. The boat came up with it, took it in tow, and made straight for the *Nautilus.*

It required tackle of enormous strength to hoist the dugong on to the platform. It weighed 10,000 lbs.

The next day, February 11th, the larder of the *Nautilus* was enriched by some more delicate game. A flight of sea-swallows rested on the *Nautilus.* It was a species of the *Sterna nilotica,* peculiar to Egypt; its beak is black, head gray and pointed, the eye surrounded by white spots, the back, wings, and tail of a grayish color, the belly and throat white, and claws red. They also took some dozen of Nile ducks, a wild bird of high flavor, its throat and upper part of the head white with black spots.

About five o'clock in the evening we sighted to the north the Cape of Ras-Mohammed. This cape forms the extremity of Arabia Petræa, comprised between the Gulf of Suez and the Gulf of Acabah.

The *Nautilus* penetrated into the Strait of Jubal, which leads to the Gulf of Suez. I distinctly saw a high mountain, towering between the two gulfs of Ras-Mohammed. It was Mount Horeb, that Sinai at the top of which Moses saw God face to face.

At six o'clock the *Nautilus,* sometimes floating, sometimes immersed, passed some distance from Tor, situated at the end of the bay, the waters of which seemed tinted with red, an observation already made by Captain Nemo. Then night fell in the midst of a heavy silence, sometimes broken by the cries of the pelican and other night-birds, and the noise of the waves breaking upon the shore, chafing against the rocks, or the panting of some far-off steamer beating the waters of the gulf with its noisy paddles.

From eight to nine o'clock the *Nautilus* remained some fathoms under the water. According to my calculation we must have been very near Suez. Through the panel of the saloon I saw the bottom of the rocks brilliantly lit up by our electric lamp. We seemed to be leaving the straits behind us more and more.

At a quarter past nine, the vessel having returned to the surface, I mounted

the platform. Most impatient to pass through Captain Nemo's tunnel, I could not stay in one place, so came to breathe the fresh night-air.

Soon in the shadow I saw a pale light, half discolored by the fog, shining about a mile from us.

"A floating lighthouse!" said someone near me.

I turned, and saw the captain.

"It is the floating light of Suez," he continued. "It will not be long before we gain the entrance of the tunnel."

"The entrance cannot be easy?"

"No, sir; and for that reason I am accustomed to go into the steersman s cage, and myself direct our course. And now if you will go down, M. Aronnax, the *Nautilus* is going under the waves, and will not return to the surface until we have passed through the Arabian Tunnel."

Captain Nemo led me toward the central staircase; halfway down he opened a door, traversed the upper deck, and landed in the pilot's cage, which it may be remembered rose at the extremity of the platform. It was a cabin measuring six feet square, very much like that occupied by the pilot on the steamboats of the Mississippi or Hudson. In the midst worked a wheel, placed vertically, and caught to the tiller-rope, which ran to the back of the *Nautilus*. Four light-ports with lenticular glasses, let in a groove in the partition of the cabin, allowed the man at the wheel to see in all directions.

This cabin was dark, but soon my eyes accustomed themselves to the obscurity, and I perceived the pilot, a strong man, with his hands resting on the spokes of the wheel. Outside, the sea appeared vividly lit up by the lantern, which shed its rays from the back of the cabin to the other extremity of the platform.

"Now," said Captain Nemo, "let us try to make our passage."

Electric wires connected the pilot's cage with the machinery-room, and from there the captain could communicate simultaneously to his *Nautilus* the direction and the speed. He pressed a metal knob, and at once the speed of the screw diminished.

I looked in silence at the high straight wall we were running by at this moment, the immovable base of a massive sandy coast. We followed it thus for an hour only some few yards off.

Captain Nemo did not take his eye from the knob, suspended by its two concentric circles in the cabin. At a simple gesture the pilot modified the course of the *Nautilus* every instant.

I had placed myself at the port scuttle, and saw some magnificent substructures of coral, zoöphytes, seaweed, and fucus, agitating their

enormous claws, which stretched out from the fissures of the rock.

At a quarter past ten, the captain himself took the helm. A large gallery, black and deep, opened before us. The *Nautilus* went boldly into it. A strange roaring was heard round its sides. It was the waters of the Red Sea, which the incline of the tunnel precipitated violently toward the Mediterranean. The *Nautilus* went with the torrent, rapid as an arrow, in spite of the efforts of the machinery, which, in order to offer more effective resistance, beat the waves with reversed screw.

On the walls of the narrow passage I could see nothing but brilliant rays, straight lines, furrows of fire, traced by the great speed, under the brilliant electric light. My heart beat fast.

At thirty-five minutes past ten, Captain Nemo quitted the helm; and, turning to me, said:

“The Mediterranean!”

In less than twenty minutes, the *Nautilus,* carried along by the torrent, had passed through the Isthmus of Suez.

Chapter VI

The Grecian Archipelago

THE NEXT DAY, THE 12th of February, at the dawn of day, the *Nautilus* rose to the surface. I hastened on to the platform. Three miles to the south the dim outline of Pelusium was to be seen. A torrent had carriedus from one sea to the other. About seven o'clock Ned and Conseil joined me.

"Well, Sir Naturalist," said the Canadian, in a slightly jovial tone, "and the Mediterranean?"

"We are floating on its surface, friend Ned."

"What!" said Conseil. "This very night?"

"Yes, this very night; in a few minutes we have passed this impassable isthmus."

"I do not believe it," replied the Canadian.

"Then you are wrong, Master Land," I continued; "this low coast which rounds off to the south is the Egyptian coast. And you, who have such good eyes, Ned, you can see the jetty of Port Said stretching into the sea."

The Canadian looked attentively.

"Certainly you are right, sir, and your captain is a first-rate man. We are in the Mediterranean. Good! Now, if you please, let us talk of our own little affair, but so that no one hears us."

I saw what the Canadian wanted, and, in my case, I thought it better to let him talk, as he wished it; so we all three went and sat down near the lantern, where we were less exposed to the spray of the blades.

"Now, Ned, we listen; what have you to tell us?"

"What I have to tell you is very simple. We are in Europe; and before Captain Nemo's caprices drag us once more to the bottom of the Polar seas, or lead us into Oceania,[bb] I ask to leave the *Nautilus."*

I wished in no way to shackle the liberty of my companions, but I certainly felt no desire to leave Captain Nemo.

Thanks to him, and thanks to his apparatus, I was each day nearer the

completion of my submarine studies; and I was rewriting my book of submarine depths in its very element. Should I ever again have such an opportunity of observing the wonders of the ocean? No, certainly not! And I could not bring myself to the idea of abandoning the Nautilus before the cycle of investigation was accomplished.

"Friend Ned, answer me frankly, are you tired of being on board? Are you sorry that destiny has thrown us into Captain Nemo's hands?"

The Canadian remained some moments without answering. Then crossing his arms, he said:

"Frankly, I do not regret this journey under the seas. I shall be glad to have made it; but now that it is made, let us have done with it. That is my idea."

"It will come to an end, Ned."

"Where and when?"

"Where I do not know, when I cannot say; or, rather, I suppose it will end when these seas have nothing more to teach us."

"Then what do you hope for?" demanded the Canadian.

"That circumstances may occur as well six months hence as now by which we may and ought to profit."

"Oh," said Ned Land, "and where shall we be in six months, if you please, Sir Naturalist?"

"Perhaps in China; you know the *Nautilus* is a rapid traveler. It goes through water as swallows through the air, or as an express on the land. It does not fear frequented seas; who can say that it may not beat the coasts of France, England, or America, on which flight may be attempted as advantageously as here."

"M. Aronnax," replied the Canadian, "your arguments are rotten at the foundation. You speak in the future, 'We shall be there! We shall be here!' I speak in the present, 'We are here, and we must profit by it.' "

Ned Land's logic pressed me hard, and I felt myself beaten on that ground. I knew not what argument would now tell in my favor.

"Sir," continued Ned, "let us suppose an impossibility; if Captain Nemo should this day offer you your liberty, would you accept it?"

"I do not know," I answered.

"And if," he added, "the offer he made you this day was never to be renewed, would you accept it?"

"Friend Ned, this is my answer. Your reasoning is against me. We must not rely on Captain Nemo's goodwill. Common prudence forbids him to set us at

liberty. On the other side, prudence bids us profit by the first opportunity to leave the *Nautilus.”*

“Well, M. Aronnax, that is wisely said.”

“Only one observation—just one. The occasion must be serious, and our first attempt must succeed; if it fails, we shall never find another, and Captain Nemo will never forgive us.”

“All that is true,” replied the Canadian. “But your observation applies equally to all attempts at flight, whether in two years’ time, or in two days. But the question is still this: if a favorable opportunity presents itself, it must be seized.”

“Agreed! And now, Ned, will you tell me what you mean by a favorable opportunity?”

“It will be that which, on a dark night, will bring the Nautilus a short distance from some European coast.”

“And you will try and save yourself by swimming?”

“Yes, if we were near enough to the bank, and if the vessel was floating at the time. Not if the bank was far away, and the boat was under the water.”

“And in that case?”

“In that case, I should seek to make myself master of the pinnace. I know how it is worked. We must get inside, and the bolts once drawn, we shall come to the surface of the water, without even the pilot, who is in the bows, perceiving our flight.”

“Well, Ned, watch for the opportunity; but do not forget that a hitch will ruin us.”

“I will not forget, sir.”

“And now, Ned, would you like to know what I think of your project?”

“Certainly, M. Aronnax.”

“Well, I think—I do not say I hope—I think that this favorable opportunity will never present itself.”

“Why not?”

“Because Captain Nemo cannot hide from himself that we have not given up all hope of regaining our liberty, and he will be on his guard, above all, in the seas, and in the sight of European coasts.”

“We shall see,” replied Ned Land, shaking his head determinedly.

“And now, Ned Land,” I added, “let us stop here. Not another word on the subject. The day that you are ready, come and let us know, and we will follow

you. I rely entirely upon you."

Thus ended a conversation which, at no very distant time, led to such grave results. I must say here that facts seemed to confirm my foresight, to the Canadian's great despair. Did Captain Nemo distrust us in these frequented seas, or did he only wish to hide himself from the numerous vessels of all nations, which plowed the Mediterranean? I could not tell; but we were oftener between waters, and far from the coast. Or, if the *Nautilus* did emerge, nothing was to be seen but the pilot's cage; and sometimes it went to great depths, for, between the Grecian Archipelago and Asia Minor, we could not touch the bottom by more than a thousand fathoms.

Thus I only knew we were near the island of Carpathos, one of the Sporades, by Captain Nemo reciting these lines from Virgil: as he pointed to a spot on the planisphere.

Est in Carpathio Neptuni gurgite vates, Cæruleus Proteus,[bc]

It was indeed the ancient abode of Proteus, the old shepherd of Neptune's flocks, now the island of Scarpanto, situated between Rhodes and Crete. I saw nothing but the granite base through the glass panels of the saloon.

The next day, the 14th of February, I resolved to employ some hours in studying the fishes of the archipelago; but for some reason or other, the panels remained hermetically sealed. Upon taking the course of the *Nautilus* I found that we were going toward Candia, the ancient isle of Crete. At the time I embarked on the *Abraham Lincoln,* the whole of this island had risen in insurrection against the despotism of the Turks. But how the insurgents had fared since that time I was absolutely ignorant, and it was not Captain Nemo, deprived of all land communications, who could tell me.

I made no allusion to this event when that night I found myself alone with him in the saloon. Besides, he seemed to be taciturn and preoccupied. Then, contrary to his custom, he ordered both panels to be opened, and going from one to the other, observed the mass of waters attentively. To what end I could not guess; so, on my side, I employed my time in studying the fish passing before my eyes.

Among others, I remarked some gobies, mentioned by Aristotle, and commonly known by the name of sea-braches which are more particularly met with in the salt waters lying near the Delta of the Nile. Near them rolled some seabream, half-phosphorescent, a kind of sparus, which the Egyptians ranked among their sacred animals, whose arrival in the waters of their river announced a fertile overflow, and was celebrated by religious ceremonies. I also noticed some cheilines about nine inches long, a bony fish with transparent shell, whose livid color is mixed with red spots; they are great eaters of marine vegetation, which gives them an exquisite flavor. These cheilines were much sought after by the epicures of ancient Rome; the inside, dressed with the soft roe of the lamprey, peacocks' brains, and tongues of the phenicoptera, composed that divine dish of which Vitellius was so enamored.

Another inhabitant of these seas drew my attention, and led my mind back to recollections of antiquity. It was the remora, that fastens on to the shark's belly. This little fish, according to the ancients, hooking on to the ship's bottom, could stop its movements; and one of them, by keeping back Antony's ship during the battle of Actium, [33] helped Augustus to gain the victory. On how little hangs the destiny of nations! I observed some fine anthiæ, which belong to the order of lutjans, a fish held sacred by the Greeks, who attributed to them the power of hunting the marine monsters from waters they frequented. Their name signifies *flower,* and they justify their appellation by their shaded colors, their shades comprising the whole gamut of reds, from the paleness of the rose to the brightness of the ruby, and the fugitive tints that clouded their dorsal fin. My eyes could not leave these wonders of the sea, when they were suddenly struck by an unexpected apparition.

In the midst of the waters a man appeared, a diver, carrying at his belt a leathern purse. It was not a body abandoned to the waves; it was a living man, swimming with a strong hand, disappearing occasionally to take breath at the surface.

I turned toward Captain Nemo, and in an agitated voice exclaimed:

"A man shipwrecked! He must be saved at any price!"

The captain did not answer me, but came and leaned against the panel.

The man had approached, and with his face flattened against the glass, was looking at us.

To my great amazement, Captain Nemo signed to him. The diver answered with his hand, mounted immediately to the surface of the water, and did not appear again.

"Do not be uncomfortable," said Captain Nemo. "It is Nicholas of Cape Matapan; surnamed Pesca.[bd] He is well known in all the Cyclades. [be] A bold diver! Water is his element, and he lives more in it than on land, going continually from one island to another, even as far as Crete."

"You know him, captain?"

"Why not, M. Aronnax?"

Saying which, Captain Nemo went toward a piece of furniture standing near the left panel of the saloon. Near this piece of furniture, I saw a chest bound with iron, on the cover of which was a copper plate, bearing the cipher of the *Nautilus* with its device.

At that moment, the captain, without noticing my presence, opened the piece of furniture, a sort of strong box, which held a great many ingots.

They were ingots of gold. From whence came this precious metal, which represented an enormous sum? Where did the captain gather this gold from and what was he going to do with it?

I did not say one word. I looked. Captain Nemo took the ingots one by one, and arranged them methodically in the chest, which he filled entirely. I estimated the contents at more than 4,000 lbs. weight of gold, that is to say, nearly £200,000.

The chest was securely fastened, and the captain wrote an address on the lid, in characters which must have belonged to Modern Greece.

This done, Captain Nemo pressed a knob, the wire of which communicated with the quarters of the crew. Four men appeared, and, not without some trouble, pushed the chest out of the saloon. Then I heard them hoisting it up the iron staircase by means of pulleys.

At that moment, Captain Nemo turned to me.

“And you were saying, sir?” said he.

“I was saying nothing, captain.”

“Then, sir, if you will allow me, I will wish you good-night.”

Whereupon he turned and left the saloon.

I returned to my room much troubled, as one may believe. I vainly tried to sleep—I sought the connecting link between the apparitionof the diver and the chest filled with gold. Soon, I felt by certain movements of pitching and tossing that the *Nautilus* was leaving the depths and returning to the surface.

Then I heard steps upon the platform; and I knew they were unfastening the pinnace, and launching it upon the waves. For one instant it struck the side of the Nautilus, then all noise ceased.

Two hours after, the same noise, the same going and coming was renewed; the boat was hoisted on board, replaced in its socket, and the *Nautilus* again plunged under the waves.

So these millions had been transported to their address. To what point of the continent? Who was Captain Nemo’s correspondent?

The next day, I related to Conseil and the Canadian the events of the night, which had excited my curiosity to the highest degree. My companions were not less surprised than myself.

“But where does he take his millions to?” asked Ned Land.

To that there was no possible answer. I returned to the saloon after having breakfast, and set to work. Till five o’clock in the evening, I employed myself in arranging my notes. At that moment (ought I to attribute it to some peculiar idiosyncrasy?) I felt so great a heat that I was obliged to take off my coat of byssus! It was strange, for we were not under low latitudes; and even then, the *Nautilus,* submerged as it was, ought to experience no change of temperature. I looked at the manometer; it showed a depth of sixty feet, to which atmospheric heat could never attain.

I continued my work, but the temperature rose to such a pitch as to be intolerable.

“Could there be fire on board?” I asked myself.

I was leaving the saloon, when Captain Nemo entered; he approached the thermometer, consulted it, and turning to me, said:

“Forty-two degrees.”

“I have noticed it, captain,” I replied; “and if it gets much hotter we cannot bear it.”

“Oh, sir, it will not get hotter if we do not wish it!”

“You can reduce it as you please, then?”

“No; but I can go further from the stove which produces it.”

“It is outward then!”

“Certainly; we are floating in a current of boiling water.”

“Is it possible!” I exclaimed.

“Look.”

The panels opened, and I saw the sea entirely white all round. A sulphurous smoke was curling amid the waves, which boiled like water in a copper. I placed my hand on one of the panes of glass, but the heat was so great that I quickly took it off again.

“Where are we?” I asked.

“Near the island of Santorin,[bf] sir,” replied the captain, “and just in the canal which separates Nea Kamenni from Pali Kamenni. I wished to give you a sight of the curious spectacle of a submarine eruption.”

“I thought,” said I, “that the formation of these new islands was ended.”

“Nothing is ever ended in the volcanic parts of the sea,” replied Captain Nemo; “and the globe is always being worked by subterranean fires. Already, in the nineteenth year of our era, according to Cassiodorus and Pliny, a new island, Theia (the divine), appeared in the very place where these islets have recently been formed. Then they sank under the waves, to rise again in the year 69, when they again subsided. Since that time to our days, the Plutonian work has been suspended. But, on the 3d of February, 1866, a new island, which they named George Island, emerged from the midst of the sulphurous vapor near Nea Kamenni, and settled again the 6th of the same month. Seven days after, the 13th of February, the island of Aphroessa appeared, leaving between Nea Kamenni and itself a canal ten yards broad. I was in these seas when the phenomenon occurred, and I was able therefore to observe all the different phases. The island of Aphroessa, of round form, measured 300 feet in

diameter, and thirty feet in height. It was composed of black and vitreous lava, mixed with fragments of felspar. And lastly, on the 10th of March, a smaller island, called Reka, showed itself near Nea Kamenni, and since then these three have joined together, forming but one and the same island."

"And the canal in which we are at this moment?" I asked.

"Here it is," replied Captain Nemo, showing me a map of the archipelago. "You see I have marked the new islands."

I returned to the glass. The *Nautilus* was no longer moving, the heat was becoming unbearable. The sea, which till now had been white, was red, owing to the presence of salts of iron. In spite of the ship's being hermetically sealed, an insupportable smell of sulphur filled the saloon, and the brilliancy of the electricity was entirely extinguished by bright scarlet flames. I was in a bath, I was choking, I was broiled.

"We can remain no longer in this boiling water," said I to the captain.

"It would not be prudent," replied the impassive Captain Nemo.

An order was given; the *Nautilus* tacked about and left the furnace it could not brave with impunity. A quarter of an hour after we were breathing fresh air on the surface. The thought then struck me that, if Ned Land had chosen this part of the sea for our flight, we should never have come alive out of this sea of fire.

The next day, the 16th of February, we left the basin which, between Rhodes and Alexandria, is reckoned about 1,500 fathoms in depth, and the *Nautilus,* passing some distance from Cerigo, quitted the Grecian Archipelago, after having doubled Cape Matapan.

Chapter VII

The Mediterranean in Forty-eight Hours

THE MEDITERRANEAN, THE BLUE sea *par excellence,*[bg] "the great sea" of the Hebrews, "the sea" of the Greeks, the "mare nostrum" of the Romans, bordered by orange trees, aloes, cacti, and sea-pines, embalmed with the perfume of the myrtle, surrounded by rude mountains, saturated with pure and transparent air, but incessantly worked by underground fires, a perfect battlefield in which Neptune and Pluto[bh] still dispute the empire of the world!

It is upon these banks, and on these waters, says Michelet,[34] that man is renewed in one of the most powerful climates of the globe. But, beautiful as it was, I could only take a rapid glance at the basin whose superficial area is two millions of square yards. Even Captain Nemo's knowledge was lost to me, for this enigmatical person did not appear once during our passage at full speed. I estimated the course which the *Nautilus* took under the waves of the sea at about six hundred leagues, and it was accomplished in forty-eight hours. Starting on the morning of the 16th of February from the shores of Greece, we had crossed the Straits of Gibraltar by sunrise on the 18th.

It was plain to me that this Mediterranean, inclosed in the midst of those countries which he wished to avoid, was distasteful to Captain Nemo. Those waves and those breezes brought back too many remembrances, if not too many regrets. Here he had no longer that independence and that liberty of gait which he had when in the open seas, and his *Nautilus* felt itself cramped between the close shores of Africa and Europe.

Our speed was now twenty-five miles an hour. It may be well understood that Ned Land, to his great disgust, was obliged to renounce his intended flight. He could not launch the pinnace, going at the rate of twelve or thirteen yards every second. To quit the *Nautilus* under such conditions would be as bad as jumping from a train going at full speed—an imprudent thing, to say the least of it. Besides, our vessel only mounted to the surface of the waves at night to renew its stock of air; it was steered entirely by the compass and the log.

I saw no more of the interior of this Mediterranean than a traveler by express train perceives of the landscape which flies before his eyes; that is to say, the distant horizon, and not the nearer objects which pass like a flash of lightning.

In the midst of the mass of waters brightly lit up by the electric light glided some of those lampreys, more than a yard long, common to almost every climate. Some of the oxyrhynchi, a kind of ray five feet broad, with white belly and gray spotted back, spread out like a large shawl carried along by the current. Other rays passed so quickly that I could not see if they deserved the name of eagles which was given to them by the ancient Greeks, or the qualification of rats, toads, and bats, with which modern fishermen have loaded them. A few milander sharks, twelve feet long, and much feared by divers, struggled among them. Sea foxes eight feet long, endowed with wonderful fineness of scent, appeared like large blue shadows. Some dorades of the shark kind, some of which measured seven feet and a half, showed themselves in their dress of blue and silver, encircled by small bands which struck sharply against the somber tints of their fins, a fish consecrated to Venus,[bi] the eyes of which are incased in a socket of gold, a precious species, friend of all waters, fresh or salt, an inhabitant of rivers, lakes, and oceans, living in all climates, and bearing all temperatures; a race belonging to the geological era of the earth, and which has preserved all the beauty of its first days. Magnificent sturgeons, nine or ten yards long, creatures of great speed, striking the panes of glass with their strong tails, displayed their bluish backs with small brown spots; they resemble the sharks, but are not equal to them in strength, and are to be met with in all seas. But of all the diverse inhabitants of the Mediterranean, those I observed to the greatest advantage, when the Nautilus approached the surface, belonged to the sixty-third genus of bony fish. They were a kind of tunny, with bluish-black backs, and silvery breastplates, whose dorsal fins threw out sparkles of gold. They are said to follow in the wake of vessels, whose refreshing shade they seek from the fire of a tropical sky, and they did not belie the saying, for they accompanied the *Nautilus* as they did in former times the vessel of La Perouse. For many a long hour they struggled to keep up with our vessel. I was never tired of admiring these creatures really built for speed—their small heads, their bodies lithe and cigar-shaped, which in some were more than three yards long, their pectoral fins, and forked tail endowed with remarkable strength. They swam in a triangle, like certain flocks of birds, whose rapidity they equaled, and of which the ancients used to say that they understood geometry and strategy. But still they do not escape the pursuit of the provençals, who esteem them as highly as the inhabitants of the Propontis[bj] and of Italy used to do; and these precious but blind and foolhardy creatures perish by millions in the nets of the Marseillaise.

With regard to the species of fish common to the Atlantic and the Mediterranean, the giddy speed of the *Nautilus* prevented me from observing them with any degree of accuracy.

As to marine mammals, I thought, in passing the entrance of the Adriatic, that I saw two or three cachalots, furnished with one dorsal fin, of the genus physetera, some dolphins of the genus globicephala, peculiar to the Mediterranean, the back part of the head being marked like a zebra with small lines; also, a dozen of seals, with white bellies and black hair, known by the name of *monks,* and which really have the air of a Dominican; they are about

three yards in length.

As to zoöphytes, for some instants I was able to admire a beautiful orange galeolaria, which had fastened itself to the port panel; it held on by a long filament, and was divided into an infinity of branches, terminated by the finest lace which could ever have been woven by the rivals of Arachne[bk] herself. Unfortunately, I could not take this admirable specimen; and doubtless no other Mediterranean zoöphyte would have offered itself to my observation, if, on the night of the 16th, the *Nautilus* had not, singularly enough, slackened its speed, under the following circumstances.

We were then passing between Sicily and the coast of Tunis. In the narrow space between Cape Bon and the Straits of Messina the bottom of the sea rose almost suddenly. There was a perfect bank, on which there was not more than nine fathoms of water, while on either side the depth was ninety fathoms.

The *Nautilus* had to maneuver very carefully so as not to strike against this submarine barrier.

I showed Conseil on the map of the Mediterranean the spot occupied by this reef.

“But if you please, sir,” observed Conseil, “it is like a real isthmus joining Europe to Africa.”

“Yes, my boy; it forms a perfect bar to the Straits of Lybia, and the soundings of Smith have proved that in former times the continents between Cape Boco and Cape Furina were joined.”

“I can well believe it,” said Conseil.

“I will add,” I continued, “that a similar barrier exists between Gibraltar and Ceuta,[bl] which in geological times formed the entire Mediterranean.”

“What if some volcanic burst should one day raise these two barriers above the waves?”

“It is not probable, Conseil.”

“Well, but allow me to finish, please, sir; if this phenomenon should take place, it will be troublesome for M. Lesseps, who has taken so much pains to pierce the isthmus.”

“I agree with you; but I repeat, Conseil, this phenomenon will never happen. The violence of subterranean force is ever diminishing. Volcanoes, so plentiful in the first days of the world, are being extinguished by degrees; the internal heat is weakened; the temperature of the lower strata of the globe is lowered by a perceptible quantity every century to the detriment of our globe, for its heat is its life.”

“But the sun?”

“The sun is not sufficient, Conseil. Can it give heat to a dead body?”

“Not that I know of.”

“Well, my friend, this earth will one day be that cold corpse; it will become uninhabitable and uninhabited like the moon, which has long since lost all its vital heat.”

“In how many centuries?”

“In some hundreds of thousands of years, my boy.”bm

“Then,” said Conseil, “we shall have time to finish our journey, that is, if Ned Land does not interfere with it.”

And Conseil, reassured, returned to the study of the bank, which the *Nautilus* was skirting at a moderate speed.

There, beneath the rocky and volcanic bottom, lay outspread a living flora of sponges and reddish cydippes, which emitted a slight phosphorescent light, commonly known by the name of sea-cucumbers; and walking comatulæ more than a yard long, the purple of which completely colored the water around.

The *Nautilus* having now passed the high bank in the Lybian Straits returned to the deep waters and its accustomed speed.

From that time no more mollusks, no more articulates, no more zoöphytes; barely a few large fish passing like shadows.

During the night of the 16th and 17th of February, we had entered the second Mediterranean basin, the greatest depth of which was 1,450 fathoms. The Nautilus, by the action of its screw, slid down the inclined planes, and buried itself in the lowest depths of the sea.

On the 18th of February, about three o’clock in the morning, we were at the entrance of the Straits of Gibraltar. There once existed two currents—an upper one, long since recognized, which conveys the waters of the ocean into the basin of the Mediterranean; and a lower counter-current, which reasoning has now shown to exist. Indeed, the volume of water in the Mediterranean, incessantly added to by the waves of the Atlantic, and by rivers falling into it, would each year raise the level of this sea, for its evaporation is not sufficient to restore the equilibrium. As it is not so, we must necessarily admit the existence of an under-current, which empties into the basin of the Atlantic, through the Straits of Gibraltar, the surplus waters of the Mediterranean. A fact, indeed; and it was this counter-current by which the *Nautilus* profited. It advanced rapidly by the narrow pass. For one instant I caught a glimpse of the beautiful ruins of the temple of Hercules, buried in the ground, according to Pliny, and with the low island which supports it; and a few minutes later we were floating on the Atlantic.

Chapter VIII

Vigo Bay

THE ATLANTIC! A VAST sheet of water, whose superficial area covers twenty-five millions of square miles, the length of which is nine thousand miles, with a mean breadth of two thousand seven hundred—an ocean whose parallel winding shores embrace an immense circumference, watered by the largest rivers of the world, the St. Lawrence, the Mississippi, the Amazon, the Plata, the Orinoco, the Niger, the Senegal, the Elbe, the Loire, and the Rhine, which carry water from the most civilized, as well as from the most savage countries! Magnificent field of water, incessantly plowed by vessels of every nation, sheltered by the flags of every nation, and which terminates in those two terrible points so dreaded by mariners, Cape Horn, and the Cape of Tempests! bn

The *Nautilus* was piercing the water with its sharp spur, after having accomplished nearly ten thousand leagues in three months and a half, a distance greater than the great circle of the earth. Where were we going now, and what was reserved for the future? The *Nautilus,* leaving the Straits of Gibraltar, had gone far out. It returned to the surface of the waves, and our daily walks on the platform were restored to us.

I mounted at once, accompanied by Ned Land and Conseil. At a distance of about twelve miles, Cape St. Vincent was dimly to be seen, forming the southwestern point of the Spanish peninsula. A strong southerly gale was blowing. The sea was swollen and billowy; it made the *Nautilus* rock violently. It was almost impossible to keep one's footing on the platform, which the heavy rolls of the sea beat over every instant. So we descended after inhaling some mouthfuls of fresh air.

I returned to my room, Conseil to his cabin; but the Canadian, with a preoccupied air, followed me. Our rapid passage across the Mediterranean had not allowed him to put his project into execution, and he could not help showing his disappointment. When the door of my room was shut, he sat down and looked at me silently.

"Friend Ned," said I, "I understand you; but you cannot reproach yourself. To have attempted to leave the *Nautilus* under the circumstances would have been folly."

Ned Land did not answer; his compressed lips and frowning brow showed with him the violent possession this fixed idea had taken of his mind.

“Let us see,” I continued; “we need not despair yet. We are going up the coast of Portugal again; France and England are not far off, where we can easily find refuge. Now, if the *Nautilus,* on leaving the Straits of Gibraltar, had gone to the south, if it had carried us toward regions where there were no continents, I should share your uneasiness. But we know now that Captain Nemo does not fly from civilized seas, and in some days I think you can act with security.”

Ned Land still looked at me fixedly; at length his fixed lips parted, and he said, “It is for to-night.”

I drew myself up suddenly. I was, I admit, little prepared for this communication. I wanted to answer the Canadian, but words would not come.

“We agreed to wait for an opportunity,” continued Ned Land, “and the opportunity has arrived. This night we shall be but a few miles from the Spanish coast. It is cloudy. The wind blows freely. I have your word, M. Aronnax, and I rely upon you.”

As I was still silent, the Canadian approached me.

“To-night, at nine oVigo Bay clock,” said he. “I have warned Conseil. At that moment, Captain Nemo will be shut up in his room, probably in bed. Neither the engineers nor the ship’s crew can see us. Conseil and I will gain the central staircase, and you, M. Aronnax, will remain in the library, two steps from us, waiting my signal. The oars, the mast, and the sail are in the canoe. I have even succeeded in getting in some provisions. I have procured an English wrench, to unfasten the bolts which attach it to the shell of the *Nautilus.* So all is ready, till to-night.”

“The sea is bad.”

“That I allow,” replied the Canadian, “but we must risk that. Liberty is worth paying for; besides, the boat is strong, and a few miles with a fair wind to carry us is no great thing. Who knows but by tomorrow we may be a hundred leagues away? Let circumstances only favor us, and by ten or eleven oVigo Bay clock we shall have landed on some spot of *terra firma,* alive or dead. But adieu now till to-night.”

With these words, the Canadian withdrew, leaving me almost dumb. I had imagined that, the chance gone, I should have time to reflect and discuss the matter. My obstinate companion had given me no time; and, after all, what could I have said to him? Ned Land was perfectly right. There was almost the opportunity to profit by. Could I retract my word, and take upon myself the responsibility of compromising the future of my companions? To-morrow Captain Nemo might take us far from all land.

At that moment a rather loud hissing told me that the reservoirs were filling, and that the *Nautilus* was sinking under the waves of the Atlantic.

A sad day I passed, between the desire of regaining my liberty of action,

and of abandoning the wonderful *Nautilus,* and leaving my submarine studies incomplete.

What dreadful hours I passed thus, sometimes seeing myself and companions safely landed, sometimes wishing, in spite of my reason, that some unforeseen circumstances would prevent the realization of Ned Land's project.

Twice I went to the saloon. I wished to consult the compass. I wished to see if the direction the *Nautilus* was taking was bringing us nearer or taking us further from the coast. But no; the *Nautilus* kept in Portuguese waters.

I must therefore take my part, and prepare for flight. My luggage was not heavy; my notes, nothing more.

As to Captain Nemo, I asked myself what he would think of our escape; what trouble, what wrong it might cause him, and what he might do in case of its discovery or failure. Certainly I had no cause to complain of him; on the contrary, never was hospitality freer than his. In leaving him I could not be taxed with ingratitude. No oath bound us to him. It was on the strength of circumstances he relied, and not upon our word, to fix us forever.

I had not seen the captain since our visit to the island of Santorin. Would chance bring me to his presence before our departure? I wished it, and I feared it at the same time. I listened if I could hear him walking in the room contiguous to mine. No sound reached my ear. I felt an unbearable uneasiness. This day of waiting seemed eternal. Hours struck too slowly to keep pace with my impatience.

My dinner was served in my room as usual. I ate but little, I was too preoccupied. I left the table at seven oVigo Bay clock. A hundred and twenty minutes (I counted them) still separated me from the moment in which I was to join Ned Land. My agitation redoubled. My pulse beat violently. I could not remain quiet. I went and came, hoping to calm my troubled spirit by constant movement. The idea of failure in our bold enterprise was the least painful of my anxieties; but the thought of seeing our project discovered before leaving the *Nautilus,* of being brought before Captain Nemo, irritated, or (what was worse) saddened at my desertion, made my heart beat.

I wanted to see the saloon for the last time. I descended the stairs, and arrived in the museum where I had passed so many useful and agreeable hours. I looked at all its riches, all its treasures, like a man on the eve of an eternal exile who was leaving never to return. These wonders of nature, these masterpieces of art, among which, for so many days, my life had been concentrated, I was going to abandon them forever! I should like to have taken a last look through the windows of the saloon into the waters of the Atlantic; but the panels were hermetically closed, and a cloak of steel separated me from that ocean which I had not yet explored.

In passing through the saloon, I came near the door, let into the angle, which opened into the captain's room. To my great surprise this door was ajar.

I drew back, involuntarily. If Captain Nemo should be in his room, he could see me. But, hearing no noise, I drew nearer. The room was deserted. I pushed open the door, and took some steps forward. Still the same monk-like severity of aspect.[35]

Suddenly the clock struck eight. The first beat of the hammer on the bell awoke me from my dreams. I trembled as if an invisible eye had plunged into my most secret thoughts, and I hurried from the room.

There my eye fell upon the compass. Our course was still north. The log indicated moderate speed, the manometer a depth of about sixty feet.

I returned to my room, clothed myself warmly—sea boots, an otterskin cap, a great-coat of byssus, lined with sealskin; I was ready, I was waiting. The vibration of the screw alone broke the deep silence which reigned on board. I listened attentively. Would no loud voice suddenly inform me that Ned Land had been surprised in his projected flight? A mortal dread hung over me, and I vainly tried to regain my accustomed coolness.

At a few minutes to nine, I put my ear to the captain's door. No noise. I left my room and returned to the saloon, which was half in obscurity, but deserted.

I opened the door communicating with the library. The same insufficient light, the same solitude. I placed myself near the door leading to the central staircase, and there waited for Ned Land's signal.

At that moment the trembling of the screw sensibly diminished, then it stopped entirely. The silence was now only disturbed by the beatings of my own heart. Suddenly a slight shock was felt; and I knew that the *Nautilus* had stopped at the bottom of the ocean. My uneasiness increased. The Canadian's signal did not come. I felt inclined to join Ned Land and beg of him to put off his attempt. I felt that we were not sailing under our usual conditions.

At this moment the door of the large saloon opened, and Captain Nemo appeared. He saw me, and, without further preamble, began in an amiable tone of voice:

"Ah, sir! I have been looking for you. Do you know the history of Spain?"

Now, one might know the history of one's own country by heart; but in the condition I was at the time, with troubled mind and head quite lost, I could not have said a word of it.

"Well," continued Captain Nemo, "you heard my question? Do you know the history of Spain?"

"Very slightly," I answered.

"Well, here are learned men having to learn," said the captain. "Come, sit down, and I will tell you a curious episode in this history. Sir, listen well," said he; "this history will interest you on one side, for it will answer a question

which doubtless you have not been able to solve."

"I listen, captain," said I, not knowing what my interlocutor was driving at, and asking myself if this incident was bearing on our projected flight.

"Sir, if you have no objection, we will go back to 1702. You cannot be ignorant that your king, Louis XIV, thinking that the gesture of a potentate was sufficient to bring the Pyrenees under his yoke, had imposed the Duke of Anjou, his grandson, on the Spaniards.[bo] This prince reigned more or less badly under the name of Philip V, and had a strong party against him abroad. Indeed, the preceding year, the royal houses of Holland, Austria, and England had concluded a treaty of alliance at the Hague, with the intention of plucking the crown of Spain from the head of Philip V, and placing it on that of an archduke to whom they prematurely gave the title of Charles III.

"Spain must resist this coalition; but she was almost entirely un-provided with either soldiers or sailors. However, money would not fail them, provided that their galleons, laden with gold and silver from America, once entered their ports. And about the end of 1702 they expected a rich convoy which France was escorting with a fleet of twenty-three vessels, commanded by Admiral Château-Renaud, for the ships of the coalition were already beating the Atlantic. This convoy was to go to Cadiz, but the admiral, hearing that an English fleet was cruising in those waters, resolved to make for a French port.

"The Spanish commanders of the convoy objected to this decision. They wanted to be taken to a Spanish port, and if not to Cadiz, into Vigo Bay, situated on the northwest coast of Spain, and which was not blocked.

"Admiral Château-Renaud had the rashness to obey this injunction, and the galleons entered Vigo Bay.

"Unfortunately, it formed an open road which could not be defended in any way. They must therefore hasten to unload the galleons before the arrival of the combined fleet; and time would not have failed them had not a miserable question of rivalry suddenly arisen.

"You are following the chain of events?" asked Captain Nemo.

"Perfectly," said I, not knowing the end proposed by this historical lesson.

"I will continue. This is what passed. The merchants of Cadiz had a privilege by which they had the right of receiving all merchandise coming from the West Indies. Now, to disembark these ingots at the port of Vigo was depriving them of their rights. They complained at Madrid, and obtained the consent of the weak-minded Philip that the convoy, without discharging its cargo, should remain sequestered in the roads of Vigo until the enemy had disappeared.

"But while coming to this decision, on the 22d of October, 1702, the English vessels arrived in Vigo Bay, when Admiral Château-Renaud, in spite of inferior forces, fought bravely. But seeing that the treasure must fall into the

enemy's hands, he burned and scuttled every galleon, which went to the bottom with their immense riches."

Captain Nemo stopped. I admit I could not yet see why this history should interest me.

"Well?" I asked.

"Well, M. Aronnax," replied Captain Nemo, "we are in that Vigo Bay, and it rests with yourself whether you will penetrate its mysteries."

The captain rose, telling me to follow him. I had had time to recover. I obeyed. The saloon was dark, but through the transparent glass the waves were sparkling. I looked.

For half a mile around the *Nautilus* the waters seemed bathed in electric light. The sandy bottom was clean and bright. Some of the ship's crew in their diving-dresses were clearing away half-rotten barrels and empty cases from the midst of the blackened wrecks. From these cases and from these barrels escaped ingots of gold and silver, cascades of piastres and jewels. The sand was heaped up with them. Laden with their precious booty the men returned to the *Nautilus,* disposed of their burden, and went back to this inexhaustible fishery of gold and silver.

I understood now. This was the scene of the battle of the 22d of October, 1702. Here on this very spot the galleons laden for the Spanish government had sunk. Here Captain Nemo came, according to his wants, to pack up those millions with which he burdened the *Nautilus.* It was for him and him alone America had given up her precious metals. He was heir direct, without anyone to share in those treasures torn from the Incas and from the conquered of Ferdinand Cortez.

"Did you know, sir," he asked, smiling, "that the sea contained such riches?"

"I knew," I answered, "that they value the money held in suspension in these waters at two millions."

"Doubtless; but to extract this money the expense would be greater than the profit. Here, on the contrary, I have but to pick up what man has lost; and not only in Vigo Bay, but in a thousand other spots where shipwrecks have happened, and which are marked on my submarine map. Can you understand now the source of the millions I am worth?"

"I understand, captain. But allow me to tell you that in exploring Vigo Bay you have only been beforehand with a rival society."

"And which?"

"A society which has received from the Spanish government the privilege of seeking these buried galleons. The shareholders are led on by the allurement of an enormous bounty, for they value these rich shipwrecks at five

hundred millions."

"Five hundred millions they were," answered Captain Nemo, "but they are so no longer."

"Just so," said I; "and a warning to those shareholders would be an act of charity. But who knows if it would be well received? What gamblers usually regret above all is less the loss of their money, than of their foolish hopes. After all, I pity them less than the thousands of unfortunates to whom so much riches well distributed would have been profitable, while for them they will be forever barren."

I had no sooner expressed this regret than I felt that it must have wounded Captain Nemo.

"Barren!" he exclaimed, with animation. "Do you think then, sir, that these riches are lost because I gather them? Is it for myself alone, according to your idea, that I take the trouble to collect these treasures? Who told you that I did not make a good use of it? Do you think I am ignorant that there are suffering beings and oppressed races on this earth, miserable creatures to console, victims to avenge? Do you not understand?"

Captain Nemo stopped at these last words, regretting perhaps that he had spoken so much. But I had guessed that, whatever the motive which had forced him to seek independence under the sea, it had left him still a man, that his heart still beat for the sufferings of humanity, and that his immense charity was for oppressed races as well as individuals. And I then understood for whom those millions were destined, which were forwarded by Captain Nemo when the *Nautilus* was cruising in the waters of Crete.

Chapter IX

A Vanished Continent

THE NEXT MORNING, THE 19th of February, I saw the Canadian enter my room. I expected this visit. He looked very disappointed.

"Well, sir?" said he.

"Well, Ned, fortune was against us yesterday."

"Yes; that captain must needs stop exactly at the hour we intended leaving his vessel."

"Yes, Ned, he had business at his banker's."

"His banker's!"

"Or rather his banking-house; by that I mean the ocean, where his riches are safer than in the chests of the state."

I then related to the Canadian the incidents of the preceding night, hoping to bring him back to the idea of not abandoning the captain; but my recital had no other result than an energetically expressed regret from Ned, that he had not been able to take a walk on the battlefield of Vigo on his own account.

"However," said he, "all is not ended. It is only a blow of the harpoon lost. Another time we must succeed, and to-night, if necessary—"

"In what direction is the *Nautilus* going?" I asked.

"I do not know," replied Ned.

"Well, at noon we shall see the point."

The Canadian returned to Conseil. As soon as I was dressed, I went into the saloon. The compass was not reassuring. The course of the *Nautilus* was S.S.W. We were turning our backs on Europe.

I waited with some impatience till the ship's place was pricked on the chart. At about half-past eleven the reservoirs were emptied, and our vessel rose to the surface of the ocean. I rushed toward the platform. Ned Land had preceded me. No more land in sight. Nothing but an immense sea. Some sails on the horizon, doubtless those going to San Roque in search of favorable

winds for doubling the Cape of Good Hope. The weather was cloudy. A gale of wind was preparing. Ned raved, and tried to pierce the cloudy horizon. He still hoped that behind all that fog stretched the land he so longed for.

At noon the sun showed itself for an instant. The second profited by this brightness to take its height. Then the sea becoming more billowy, we descended, and the panel closed.

An hour after, upon consulting the chart, I saw the position of the *Nautilus* was marked at 16° 17' longitude, and 33° 22' latitude, at 150 leagues from the nearest coast. There was no means of flight, and I leave you to imagine the rage of the Canadian, when I informed him of our situation.

For myself, I was not particularly sorry. I felt lightened of the load which had oppressed me, and was able to return with some degree of calmness to my accustomed work.

That night, about eleven o'clock, I received a most unexpected visit from Captain Nemo. He asked me very graciously if I felt fatigued from my watch of the preceding night. I answered in the negative.

"Then, M. Aronnax, I propose a curious excursion."

"Propose, captain."

"You have hitherto only visited the submarine depths by daylight, under the brightness of the sun. Would it suit you to see them in the darkness of the night?"

"Most willingly."

"I warn you, the way will be tiring. We shall have far to walk, and must climb a mountain. The roads are not well kept."

"What you say, captain, only heightens my curiosity; I am ready to follow you."

"Come, then, sir, we will put on our diving-dresses:"

Arrived at the robing-room, I saw that neither of my companions nor any of the ship's crew were to follow us on this excursion. Captain Nemo had not even proposed my taking with me either Ned or Conseil.

In a few moments we had put on our diving-dresses; they placed on our backs the reservoirs, abundantly filled with air, but no electric lamps were prepared. I called the captain's attention to the fact.

"They will be useless," he replied.

I thought I had not heard aright, but I could not repeat my observation, for the captain's head had already disappeared in its metal case. I finished harnessing myself, I felt them put an iron-pointed stick into my hand, and some minutes later, after going through the usual form, we set foot on the

bottom of the Atlantic, at a depth of 150 fathoms. Midnight was near. The waters were profoundly dark, but Captain Nemo pointed out in the distance a reddish spot, a sort of large light shining brilliantly, about two miles from the *Nautilus*. What this fire might be, what could feed it, why and how it lit up the liquid mass, I could not say. In any case, it did light our way, vaguely, it is true, but I soon accustomed myself to the peculiar darkness, and I understood, under such circumstances, the uselessness of the Ruhmkorff apparatus.

As we advanced, I heard a kind of pattering above my head. The noise redoubling, sometimes producing a continual shower, I soon understood the cause. It was rain falling violently, and crisping the surface of the waves. Instinctively the thought flashed across my mind that I should be wet through! By the water! In the midst of the water! I could not help laughing at the odd idea. But indeed, in the thick diving-dress, the liquid element is no longer felt, and one only seems to be in an atmosphere somewhat denser than the terrestrial atmosphere. Nothing more.

After half an hour's walk the soil became stony. Medusæ, microscopic crustacea, and pennatules lit it slightly with their phosphorescent gleam. I caught a glimpse of pieces of stone covered with millions of zoöphytes and masses of seaweed. My feet often slipped upon this viscous carpet of seaweed, and without my iron-tipped stick I should have fallen more than once. In turning round I could still see the whitish lantern of the *Nautilus* beginning to pale in the distance.

But the rosy light which guided us increased and lit up the horizon. The presence of this fire under water puzzled me in the highest degree. Was it some electric effulgence? Was I going toward a natural phenomenon as yet unknown to the savants of the earth? Or even (for this thought crossed my brain) had the hand of man aught to do with this conflagration? Had he fanned this flame? Was I to meet in these depths companions and friends of Captain Nemo whom he was going to visit, and who, like him, led this strange existence? Should I find down there a whole colony of exiles, who, weary of the miseries of this earth, had sought and found independence in the deep ocean? All these foolish and unreasonable ideas pursued me. And in this condition of mind, overexcited by the succession of wonders continually passing before my eyes, I should not have been surprised to meet at the bottom of the sea one of those submarine towns of which Captain Nemo dreamed.

Our road grew lighter and lighter. The white glimmer came in rays from the summit of a mountain of about 800 feet high. But what I saw was simply a reflection, developed by the clearness of the waters. The source of this inexplicable light was a fire on the opposite side of the mountain.

In the midst of this stony maze, furrowing the bottom of the Atlantic, Captain Nemo advanced without hesitation. He knew this dreary road. Doubtless he had often traveled over it, and could not lose himself. I followed him with unshaken confidence. He seemed to me like a genie of the sea; and, as he walked before me, I could not help admiring his stature, which was

outlined in black on the luminous horizon.

It was one in the morning when we arrived at the first slopes of the mountain; but to gain access to them we must venture through the difficult paths of a vast copse.

Yes; a copse of dead trees, without leaves, without sap, trees petrified by the action of the water, and here and there overtopped by gigantic pines. It was like a coal pit, still standing, holding by the roots to the broken soil, and whose branches, like fine black paper cuttings, showed distinctly on the watery ceiling. Picture to yourself a forest in the Hartz, hanging on to the sides of the mountain, but a forest swallowed up. The paths were encumbered with seaweed and fucus, between which groveled a whole world of crustacea. I went along, climbing the rocks, striding over extended trunks, breaking the sea bind-weed which hung from one tree to the other, and frightening the fishes, which flew from branch to branch. Pressing onward, I felt no fatigue. I followed my guide, who was never tired. What a spectacle! How can I express it? How paint the aspect of those woods and rocks in this medium—their under parts dark and wild, the upper colored with red tints, by that light which the reflecting powers of the waters doubled? We climbed rocks, which fell directly after with gigantic bounds, and the low growling of an avalanche. To right and left ran long, dark galleries, where sight was lost. Here opened vast glades which the hand of man seemed to have worked; and I sometimes asked myself if some inhabitant of these submarine regions would not suddenly appear to me.

But Captain Nemo was still mounting. I could not stay behind. I followed boldly. My stick gave me good help. A false step would have been dangerous on the narrow passes sloping down to the sides of the gulfs; but I walked with firm step, without feeling any giddiness. Now I jumped a crevice the depth of which would have made me hesitate had it been among the glaciers on the land; now I ventured on the unsteady trunk of a tree, thrown across from one abyss to the other, without looking under my feet, having only eyes to admire the wild sights of this region.

There, monumental rocks, leaning on their regularly cut bases, seemed to defy all laws of equilibrium. From between their stony knees, trees sprang, like a jet under heavy pressure, and upheld others which upheld them. Natural towers, large scarps, cut perpendicularly, like a “curtain,” inclined at an angle which the laws of gravitation could never have tolerated in terrestrial regions.

Two hours after quitting the *Nautilus,* we had crossed the line of trees, and a hundred feet above our heads rose the top of the mountain, which cast a shadow on the brilliant irradiation of the opposite slope. Some petrified shrubs ran fantastically here and there. Fishes got up under our feet like birds in the long grass. The massive rocks were rent with impenetrable fractures, deep grottoes, and unfathomable holes, at the bottom of which formidable creatures might be heard moving. My blood curdled when I saw enormous antennae blocking my road, or some frightful claw closing with a noise in the shadow of some cavity. Millions of luminous spots shone brightly in the midst of the

darkness. They were the eyes of giant crustacea crouched in their holes; giant lobsters setting them selves up like halberdiers, and moving their claws with the clicking sound of pinchers; titanic crabs, pointed like a gun on its carriage; and frightful-looking poulps, interweaving their tentacles like a living nest of serpents.

We had now arrived on the first platform, where other surprises awaited me. Before us lay some picturesque ruins which betrayed the hand of man and not that of the Creator. There were vast heaps of stone, among which might be traced the vague and shadowy forms of castles and temples clothed with a world of blossoming zoöphytes, and over which, instead of ivy, seaweed and fucus threw a thick vegetable mantle. But what was this portion of the globe which had been swallowed by cataclysms? Who had placed those rocks and stones like cromlechs of prehistoric times? Where was I? Whither had Captain Nemo's fancy hurried me?

I would fain have asked him; not being able to, I stopped him—I seized his arm. But shaking his head, and pointing to the highest point of the mountain, he seemed to say:

"Come, come along; come higher!"

I followed, and in a few minutes I had climbed to the top, which for a circle of ten yards commanded the whole mass of rock.

I looked down the side we had just climbed. The mountain did not rise more than seven or eight hundred feet above the level of the plain; but on the opposite side it commanded from twice that height the depths of this part of the Atlantic. My eyes ranged far over a large space lit by a violent fulguration. In fact, the mountain was a volcano.

At fifty feet above the peak, in the midst of a rain of stones and scoriæ, a large crater was vomiting forth torrents of lava which fell in a cascade of fire into the bosom of the liquid mass. Thus situated, this volcano lit the lower plain like an immense torch, even to the extreme limits of the horizon. I said that the submarine crater threw up lava, but no flames. Flames require the oxygen of the air to feed upon, and cannot be developed underwater; but streams of lava, having in themselves the principles of their incandescence, can attain a white heat, fight vigorously against the liquid element, and turn it to vapor by contact.

Rapid currents bearing all these gases in diffusion, and torrents of lava, slid to the bottom of the mountain like an eruption of Vesuvius on another Terra del Greco.

There indeed, under my eyes, ruined, destroyed, lay a town—its roofs open to the sky, its temples fallen, its arches dislocated, its columns lying on the ground, from which one could still recognize the massive character of Tuscan architecture. Further on, some remains of a gigantic aqueduct; here the high base of an Acropolis, with the floating outline of a Parthenon;[bp] there traces of a quay, as if an ancient port had formerly abutted on the borders of

the ocean, and disappeared with its merchant vessels and its war galleys. Further on again, long lines of sunken walls and broad deserted streets—a perfect Pompeii[bq] escaped beneath the waters. Such was the sight that Captain Nemo brought before my eyes.

Where was I? Where was I? I must know at any cost. I tried to speak, but Captain Nemo stopped me by a gesture, and picking up a piece of chalk stone advanced to a rock of black basalt, and traced the one word,

ATLANTIS[36]

What a light shot through my mind! Atlantis, the ancient Meropis of Theopompus, the Atlantis of Plato, that continent denied by Origen, Jamblichus, D'Anville, Malte-Brun, and Humboldt, who placed its disappearance among the legendary tales admitted by Posidonius, Pliny, Ammianus Marcellinus, Tertullian, Engel, Buffon, and D'Avezac. I had it there now before my eyes, bearing upon it the unexceptionable testimony of its catastrophe. The region thus ingulfed was beyond Europe, Asia, and Lybia, beyond the columns of Hercules, [br] where those powerful people, the Atlantides, lived, against whom the first wars of ancient Greece were waged.

Thus, led by the strangest destiny, I was treading underfoot the mountains of this continent, touching with my hand those ruins a thousand generations old, and contemporary with the geological epochs. I was walking on the very spot where the contemporaries of the first man had walked.

While I was trying to fix in my mind every detail of this grand landscape Captain Nemo remained motionless, as if petrified in mute ecstasy, leaning on a mossy stone. Was he dreaming of those generations long since disappeared? Was he asking them the secret of human destiny? Was it here this strange man came to steep himself in historical recollections and live again this ancient life —he who wanted no modern one? What would I not have given to know his thoughts, to share them, to understand them! We remained for an hour at this place, contemplating the vast plain under the brightness of the lava, which was sometimes wonderfully intense. Rapid tremblings ran along the mountain caused by internal bubblings, deep noises distinctly transmitted through the liquid medium were echoed with majestic grandeur. At this moment the moon appeared through the mass of waters and threw her pale rays on the buried continent. It was but a gleam, but what an indescribable effect! The captain rose, cast one last look on the immense plain, and then bade me follow him.

We descended the mountain rapidly, and the mineral forest once passed, I saw the lantern of the *Nautilus* shining like a star. The captain walked straight to it, and we got on board as the first rays of light whitened the surface of the

ocean.

Chapter X

The Submarine Coal Mines

THE NEXT DAY, THE 20th of February, I awoke very late; the fatigues of the previous night had prolonged my sleep until eleven o'clock. I dressed quickly and hastened to find the course the *Nautilus* was taking. The instruments showed it to be still toward the south, with a speed of twenty miles an hour and a depth of fifty fathoms.

The species of fishes here did not differ much from those already noticed. There were rays of giant size, five yards long and endowed with great muscular strength, which enabled them to shoot above the waves; sharks of many kinds, among others a glaucus fifteen feet long, with triangular sharp teeth, and whose transparency rendered it almost invisible in the water; brown sagræ; humantins, prism-shaped and clad with a tuberculous hide; sturgeons, resembling their congeners of the Mediterranean; trumpet syngnathes a foot and a half long, furnished with grayish bladders, without teeth or tongue, and as supple as snakes.

Among bony fish Conseil noticed some blackish makairas about three yards long, armed at the upper jaw with a piercing sword; other bright-colored creatures, known in the time of Aristotle[bs] by the name of the sea-dragon, which are dangerous to capture on account of the spikes on their back; also some coryphænes with brown backs marked with little blue stripes and surrounded with a gold border; some beautiful dorades, and swordfish four-and-twenty feet long, swimming in troops, fierce animals, but rather herbivorous than carnivorous.

About four o'clock the soil, generally composed of a thick mud mixed with petrified wood, changed by degrees, and it became more stony and seemed strewn with conglomerate and pieces of basalt, with a sprinkling of lava and sulphurous obsidian. I thought that a mountainous region was succeeding the long plains, and accordingly, after a few evolutions of the *Nautilus,* I saw the southerly horizon blocked by a high wall which seemed to close all exit. Its summit evidently passed the level of the ocean. It must be a continent, or at least an island—one of the Canaries, or of the Cape Verde Islands. The bearings not being yet taken, perhaps designedly, I was ignorant of our exact position. In any case, such a wall seemed to me to mark the limits of that Atlantis of which we had in reality passed over only the smallest part.

Much longer should I have remained at the window, admiring the beauties

of sea and sky, but the panels closed. At this moment the *Nautilus* arrived at the side of this high perpendicular wall. What it would do I could not guess. I returned to my room; it no longer moved. I laid myself down with the full intention of waking after a few hours' sleep, but it was eight o'clock the next day when I entered the saloon. I looked at the manometer. It told me that the *Nautilus* was floating on the surface of the ocean. Besides, I heard steps on the platform. I went to the panel. It was open; but instead of broad daylight, as I expected, I was surrounded by profound darkness. Where were we? Was I mistaken? Was it still night? No; not a star was shining, and night has not that utter darkness.

I knew not what to think, when a voice near me said:

"Is that you, professor?"

"Ah! Captain," I answered, "where are we?"

"Underground, sir."

"Underground!" I exclaimed. "And the *Nautilus* floating still?"

"It always floats."

"But I do not understand."

"Wait a few minutes, our lantern will be lit, and if you like light places, you will be satisfied."

I stood on the platform and waited. The darkness was so complete that I could not even see Captain Nemo; but looking to the zenith, exactly above my head, I seemed to catch an undecided gleam, a kind of twilight filling a circular hole. At this instant the lantern was lit, and its vividness dispelled the faint light. I closed my dazzled eyes for an instant, and then looked again. The *Nautilus* was stationary, floating near a mountain which formed a sort of quay. The lake then supporting it was a lake imprisoned by a circle of walls, measuring two miles in diameter and six in circumference. Its level (the manometer showed) could only be the same as the outside level, for there must necessarily be a communication between the lake and the sea. The high partitions, leaning forward on their base, grew into a vaulted roof bearing the shape of an immense funnel turned upside down, the height being about five or six hundred yards. At the summit was a circular orifice, by which I had caught the slight gleam of light, evidently daylight.

"Where are we?" I asked.

"In the very heart of an extinct volcano, the interior of which has been invaded by the sea, after some great convulsion of the earth. While you were sleeping, professor, the *Nautilus* penetrated to this lagoon by a natural canal, which opens about ten yards beneath the surface of the ocean. This is its harbor of refuge, a sure, commodious, and mysterious one, sheltered from all gales. Show me, if you can, on the coasts of any of your continents or islands, a road which can give such perfect refuge from all storms."

“Certainly,” I replied, “you are in safety here, Captain Nemo. Who could reach you in the heart of a volcano? But did I not see an opening at its summit?”

“Yes; its crater, formerly filled with lava, vapor, and flames, and which now gives entrance to the life-giving air we breathe.”

“But what is this volcanic mountain?”

“It belongs to one of the numerous islands with which this sea is strewn—to vessels a simple sand-bank-to us an immense cavern. Chance led me to discover it, and chance led me well.”

“But of what use is this refuge, captain? The *Nautilus* wants no port.”

“No, sir; but it wants electricity to make it move, and the where-withal to make the electricity—sodium to feed the elements, coal from which to get the sodium, and a coal mine to supply the coal. And exactly on this spot the sea covers entire forests imbedded during the geological periods, now mineralized, and transformed into coal; for me they are an inexhaustible mine.”

“Your men follow the trade of miners here, then, captain?”

“Exactly so. These mines extend under the waves like the mines of Newcastle. Here, in their diving-dresses, pickaxe and shovel in hand, my men extract the coal, which I do not even ask from the mines of the earth. When I burn this combustible for the manufacture of sodium, the smoke, escaping from the crater of the mountain, gives it the appearance of a still active volcano.”

“And we shall see your companions at work?”

“No; not this time at least; for I am in a hurry to continue our submarine tour of the earth. So I shall content myself with drawing from the reserve of sodium I already possess. The time for loading is one day only, and we continue our voyage. So if you wish to go over the cavern, and make the round of the lagoon, you must take advantage of to-day, M. Aronnax.”

I thanked the captain, and went to look for my companions, who had not yet left their cabin. I invited them to follow me without saying where we were. They mounted the platform. Conseil, who was astonished at nothing, seemed to look upon it as quite natural that he should wake under a mountain, after having fallen asleep under the waves. But Ned Land thought of nothing but finding whether the cavern had any exit. After breakfast, about ten o’clock, we went down on to the mountain.

“Here we are, once more on land,” said Conseil.

“I do not call this land,” said the Canadian. “And besides, we are not on it, but beneath it.”

Between the walls of the mountain and the waters of the lake lay a sandy shore, which, at its greatest breadth, measured five hundred feet. On this soil one might easily make the tour of the lake. But the base of the high partitions was stony ground, with volcanic blocks and enormous pumice-stones lying in picturesque heaps. All these detached masses, covered with enamel, polished by the action of the subterraneous fires, shone resplendent by the light of our electric lantern. The mica-dust from the shore, rising under our feet, flew like a cloud of sparks. The bottom now rose sensibly, and we soon arrived at long circuitous slopes, or inclined planes, which took us higher by degrees; but we were obliged to walk carefully among these conglomerates, bound by no cement, the feet slipping on the glassy trachyte, composed of crystal, felspar, and quartz.

The volcanic nature of this enormous excavation was confirmed on all sides, and I pointed it out to my companions.

"Picture to yourselves," said I, "what this crater must have been when filled with boiling lava, and when the level of the incandescent liquid rose to the orifice of the mountain, as though melted on the top of a hot plate."

"I can picture it perfectly," said Conseil. "But, sir, will you tell me why the Great Architect has suspended operations, and how it is that the furnace is replaced by the quiet waters of the lake?"

"Most probably, Conseil, because some convulsion beneath the ocean produced that very opening which has served as a passage for the *Nautilus*. Then the waters of the Atlantic rushed into the interior of the mountain. There must have been a terrible struggle between the two elements, a struggle which ended in the victory of Neptune. But many ages have run out since then, and the submerged volcano is now a peaceable grotto."

"Very well," replied Ned Land; "I accept the explanation, sir; but, in our own interests, I regret that the opening of which you speak was not made above the level of the sea."

"But, friend Ned," said Conseil, "if the passage had not been under the sea, the *Nautilus* could not have gone through it."

We continued ascending. The steps became more and more perpendicular and narrow. Deep excavations, which we were obliged to cross, cut them here and there; sloping masses had to be turned. We slid upon our knees and crawled along. But Conseil's dexterity and the Canadian's strength surmounted all obstacles. At a height of about thirty-one feet, the nature of the ground changed without becoming more practicable. To the conglomerate and trachyte succeeded black basalt, the first dispread in layers full of bubbles, the latter forming regular prisms, placed like a colonnade supporting the spring of the immense vault, an admirable specimen of natural architecture. Between the blocks of basalt wound long streams of lava, long since grown cold, encrusted with bituminous rays; and in some places there were spread large carpets of sulphur. A more powerful light shone through the upper crater,

shedding a vague glimmer over these volcanic depressions forever buried in the bosom of this extinguished mountain. But our upward march was soon stopped at a height of about two hundred and fifty feet by impassable obstacles. There was a complete vaulted arch overhanging us, and our ascent was changed to a circular walk. At the last change vegetable life began to struggle with the mineral. Some shrubs, and even some trees, grew from the fractures of the walls. I recognized some euphorbias, with the caustic sugar coming from them; heliotropes, quite incapable of justifying their name, sadly drooped their clusters of flowers, both their color and perfume half gone. Here and there some chrysanthemums grew timidly at the foot of an aloe with long sickly looking leaves. But between the streams of lava, I saw some little violets still slightly perfumed, and I admit that I smelt them with delight. Perfume is the soul of the flower, and sea-flowers, those splendid hydrophytes, have no soul.

We had arrived at the foot of some sturdy dragon trees, which had pushed aside the rocks with their strong roots, when Ned Land exclaimed:

“Ah! sir, a hive! A hive!”

“A hive!” I replied with a gesture of incredulity.

“Yes, a hive,” repeated the Canadian, “and bees humming round it.”

I approached, and was bound to believe my own eyes. There, at a hole bored in one of the dragon trees, were some thousands of these ingenious insects, so common in all the Canaries, and whose produce is so much esteemed. Naturally enough, the Canadian wished to gather the honey, and I could not well oppose his wish. A quantity of dry leaves, mixed with sulphur, he lit with a spark from his flint, and he began to smoke out the bees. The humming ceased by degrees, and the hive eventually yielded several pounds of the sweetest honey, with which Ned Land filled his haversack.

“When I have mixed this honey with the paste of the artocarpus,” said he, “I shall be able to offer you a succulent cake.”

“Upon my word,” said Conseil, “it will be gingerbread.”

“Never mind the gingerbread,” said I; “let us continue our interesting walk.”

At every turn of the path we were following, the lake appeared in all its length and breadth. The lantern lit up the whole of its peaceable surface which knew neither ripple nor wave. The Nautilus remained perfectly immovable. On the platform, and on the mountain, the ship’s crew were working like black shadows clearly carved against the luminous atmosphere. We were now going round the highest crest of the first layers of rock which upheld the roof. I then saw that bees were not the only representatives of the animal kingdom in the interior of this volcano. Birds of prey hovered here and there in the shadows, or fled from their nests on the top of the rocks. There were sparrow-hawks with white breasts, and kestrels, and down the slopes

scampered, with their long legs, several fine fat bustards. I leave anyone to imagine the covetousness of the Canadian at the sight of this savory game, and whether he did not regret having no gun. But he did his best to replace the lead by stones, and after several fruitless attempts, he succeeded in wounding a magnificent bird. To say that he risked his life twenty times before reaching it, is but the truth; but he managed so well that the creature joined the honey cakes in his bag. We were now obliged to descend toward the shore, the crest becoming impracticable. Above us the crater seemed to gape like the mouth of a well. From this place the sky could be clearly seen, and clouds, dissipated by the west wind, leaving behind them, even on the summit of the mountain, their misty remnants—certain proof that they were only moderately high, for the volcano did not rise more than eight hundred feet above the level of the ocean. Half an hour after the Canadian's last exploit we had regained the inner shore. Here the flora was represented by large carpets of marine crystal, a little umbelliferous plant very good to pickle, which also bears the name of pierce-stone and sea-fennel. Conseil gathered some bundles of it. As to the fauna, it might be counted by thousands of crustacea of all sorts, lobsters, crabs, palæmons, spider crabs, chameleon shrimps, and a large number of shells, rockfish, and limpets. Three-quarters of an hour later, we had finished our circuitous walk, and were on board. The crew had just finished loading the sodium, and the *Nautilus* could have left that instant. But Captain Nemo gave no order. Did he wish to wait until night, and leave the submarine passage secretly? Perhaps so. Whatever it might be, the next day, the *Nautilus,* having left its port, steered clear of all land at a few yards beneath the waves of the Atlantic.

Chapter XI

The Sargasso Sea[bt]

THAT DAY THE *NAUTILUS* crossed a singular part of the Atlantic Ocean. No one can be ignorant of the existence of a current of warm water, known by the name of the Gulf Stream. After leaving the Gulf of Mexico, about the twenty-fifth degree of north latitude, this current divides into two arms, the principal one going toward the coast of Ireland and Norway, while the second bends to the south about the height of the Azores; then, touching the African shore, and describing a lengthened oval, returns to the Antilles. This second arm—it is rather a collar than an arm—surrounds with its circles of warm water that portion of the cold, quiet, immovable ocean called the Sargasso Sea, a perfect lake in the open Atlantic: it takes no less than three years for the great current to pass round it. Such was the region the *Nautilus* was now visiting, a perfect meadow, a close carpet of seaweed, fucus, and tropical berries, so thick and so compact that the stem of a vessel could hardly tear its way through it. And Captain Nemo, not wishing to entangle his screw in this herbaceous mass, kept some yards beneath the surface of the waves. The name Sargasso comes from the Spanish word *sargazzo* which signifies kelp. This kelp or varech, or berry-plant, is the principal formation of this immense bank. And this is the reason, according to the learned Maury, the author of *The Physical Geography of the Globe,* why these hydrophytes unite in the peaceful basin of the Atlantic. The only explanation which can be given, he says, seems to me to result from the experience known to all the world. Place in a vase some fragments of cork or other floating body, and give to the water in the vase a circular movement the scattered fragments will unite in a group in the center of the liquid surface, that is to say, in the part least agitated. In the phenomenon we are considering, the Atlantic is the vase, the Gulf Stream the circular current, and the Sargasso Sea the central point at which the floating bodies unite.

I share Maury's opinion, and I was able to study the phenomenon in the very midst, where vessels rarely penetrate. Above us floated products of all kinds, heaped up among these brownish plants; trunks of trees torn from the Andes or the Rocky Mountains, and floated by the Amazon or the Mississippi; numerous wrecks, remains of keels, or ships' bottoms, side planks stove in, and so weighted with shells and barnacles that they could not again rise to the surface. And time will one day justify Maury's other opinion, that these substances thus accumulated for ages will become petrified by the action of the water, and will then form inexhaustible coal mines—a precious reserve prepared by far-seeing nature for the moment when men shall have exhausted

the mines of continents.

In the midst of this inextricable mass of plants and seaweed, I noticed some charming pink halcyons and actiniae, with their long tentacles trailing after them; medusæ, green, red, and blue, and the great rhyostoms of Cuvier, the large umbrella of which was bordered and festooned with violet.

All the day of the 22d of February we passed in the Sargasso Sea, where such fish as are partial to marine plants and fuci find abundant nourishment. The next, the ocean had returned to its accustomed aspect. From this time for nineteen days, from the 23d of February to the 12th of March, the *Nautilus kept* in the middle of the Atlantic, carrying us at a constant speed of a hundred leagues in twenty-four hours. Captain Nemo evidently intended accomplishing his submarine programme, and I imagined that he intended, after doubling Cape Horn, to return to the Australian seas of the Pacific. Ned Land had cause for fear. In these large seas, void of islands, we could not attempt to leave the boat. Nor had we any means of opposing Captain Nemo's will. Our only course was to submit; but what we could neither gain by force nor cunning, I liked to think might be obtained by persuasion. This voyage ended, would he not consent to restore our liberty, under an oath never to reveal his existence—an oath of honor which we should have religiously kept? But we must consider that delicate question with the captain. But was I free to claim this liberty? Had he not himself said from the beginning, in the firmest manner, that the secret of his life exacted from him our lasting imprisonment on board the *Nautilus?* And would not my four months' silence appear to him a tacit acceptance of our situation? And would not a return to the subject result in raising suspicions which might be hurtful to our projects if at some future time a favorable opportunity offered to return to them?

During the nineteen days mentioned above, no incident of any note happened to signalize our voyage. I saw little of the captain; he was at work. In the library I often found his books left open, especially those on natural history. My work on submarine depths, conned over by him, was covered with marginal notes, often contradicting my theories and systems; but the captain contented himself with thus purging my work; it was very rare for him to discuss it with me. Sometimes I heard the melancholy tones of his organ; but only at night, in the midst of the deepest obscurity, when the *Nautilus* slept upon the deserted ocean. During this part of our voyage we sailed whole days on the surface of the waves. The sea seemed abandoned. A few sailing-vessels, on the road to India, were making for the Cape of Good Hope. One day we were followed by the boats of a whaler, who, no doubt, took us for some enormous whale of great price; but Captain Nemo did not wish the worthy fellows to lose their time and trouble, so ended the chase by plunging under the water. Our navigation continued until the 13th of March; that day the *Nautilus* was employed in taking soundings, which greatly interested me. We had then made about 13,000 leagues since our departure from the high seas of the Pacific. The bearings gave us 45° 37' south latitude, and 37° 53' west longitude. It was the same water in which Captain Denham, of the *Herald,* sounded 7,000 fathoms without finding the bottom. There, too, Lieutenant

Parker, of the American frigate *Congress,* could not touch the bottom with 15,140 yards. Captain Nemo intended seeking the bottom of the ocean by a diagonal sufficiently lengthened by means of lateral planes, placed at an angle of forty-five degrees with the water-line of the *Nautilus.* Then the screw set to work at its maximum speed, its four blades beating the waves with indescribable force. Under this powerful pressure the hull of the *Nautilus* quivered like a sonorous chord, and sank regularly under the water.

At 7,000 fathoms I saw some blackish tops rising from the midst of the waters; but these summits might belong to high mountains like the Himalayas or Mont Blanc, even higher; and the depth of the abyss remained incalculable. The *Nautilus* descended still lower, in spite of the great pressure. I felt the steel plates tremble at the fastenings of the bolts; its bars bent, its partitions groaned; the windows of the saloon seemed to curve under the pressure of the waters. And this firm structure would doubtless have yielded, if, as its captain had said, it had not been capable of resistance like a solid block. In skirting the declivity of these rocks, lost under the water, I still saw some shells, some serpulæ and spinorbes, still living, and some specimens of asteriads. But soon this last representative of animal life disappeared; and at the depth of more than three leagues, the *Nautilus* had passed the limits of submarine existence, even as a balloon does when it rises above the respirable atmosphere. We had attained a depth of 16,000 yards (four leagues), and the sides of the *Nautilus* then bore a pressure of 1,600 atmospheres, that is to say, 3,200 pounds to each square two-fifths of an inch of its surface.

“What a situation to be in!” I exclaimed. “To overrun these deep regions where man has never trod! Look, captain, look at these magnificent rocks, these uninhabited grottoes, these lowest receptacles of the globe, where life is no longer possible! What unknown sights are here! Why should we be unable to preserve a remembrance of them?”

“Would you like to carry away more than the remembrance?” said Captain Nemo.

“What do you mean by those words?”

“I mean to say that nothing is easier than to take a photographic view of this submarine region.”

I had not time to express my surprise at this new proposition, when, at Captain Nemo’s call, an objective was brought into the saloon. Through the widely opened panel, the liquid mass was bright with electricity, which was distributed with such uniformity that not a shadow, not a gradation, was to be seen in our manufactured light. The *Nautilus* remained motionless, the force of its screw subdued by the inclination of its planes: the instrument was propped on the bottom of the oceanic site, and in a few seconds we had obtained a perfect negative. I here give the positive, from which may be seen those primitive rocks, which have never looked upon the light of heaven; that lowest granite which forms the foundation of the globe; those deep grottoes, woven in the stony mass whose outlines were of such sharpness, and the border lines

of which are marked in black, as if done by the brush of some Flemish artist. Beyond that again a horizon of mountains, an admirable undulating line, forming the prospective of the landscape. I cannot describe the effect of these smooth, black, polished rocks, without moss, without a spot, and of strange forms, standing solidly on the sandy carpet, which sparkled under the jets of our electric light.

But the operation being over, Captain Nemo said: “Let us go up; we must not abuse our position, nor expose the *Nautilus* too long to such great pressure.”

“Go up again!” I exclaimed.

“Hold well on.”

I had not time to understand why the captain cautioned me thus, when I was thrown forward on to the carpet. At a signal from the captain, its screw was shipped, and its blades raised vertically; the *Nautilus* shot into the air like a balloon, rising with stunning rapidity, and cutting the mass of waters with a sonorous agitation. Nothing was visible; and in four minutes it had shot through the four leagues which separated it from the ocean, and, after emerging like a flying-fish, fell, making the waves rebound to an enormous height.

Chapter XII

Cachalots[bu] and Whales

DURING THE NIGHTS OF the 13th and 14th of March, the *Nautilus* returned to its southerly course. I fancied that, when on a level with Cape Horn, he would turn the helm westward, in order to beat the Pacific seas, and so complete the tour of the world. He did nothing of the kind, but continued on his way to the southern regions. Where was he going to? To the pole? It was madness! I began to think that the captain's temerity justified Ned Land's fears. For some time past the Canadian had not spoken to me of his projects of flight; he was less communicative, almost silent. I could see that this lengthened imprisonment was weighing upon him, and I felt that rage was burning within him. When he met the captain, his eyes lit up with suppressed anger; and I feared that his natural violence would lead him into some extreme. That day, the 14th of March, Conseil and he came to me in my room. I inquired the cause of their visit.

"A simple question to ask you, sir," replied the Canadian.

"Speak, Ned."

"How many men are there on board the *Nautilus,* do you think?"

"I cannot tell, my friend."

"I should say that its working does not require a large crew."

"Certainly, under existing conditions, ten men, at the most, ought to be enough."

"Well, why should there be any more?"

"Why?" I replied, looking fixedly at Ned Land, whose meaning was easy to guess. "Because," I added, "if my surmises are correct, and if I have well understood the captain's existence, the *Nautilus* is not only a vessel, it is also a place of refuge for those who, like its commander, have broken every tie upon earth."

"Perhaps so," said Conseil, "but, in any case, the *Nautilus* can only contain a certain number of men. Could not you, sir, estimate their maximum?"

"How, Conseil?"

“By calculation; given the size of the vessel, which you know, sir, and consequently the quantity of air it contains, knowing also how much each man expends at a breath, and comparing these results with the fact that the *Nautilus* is obliged to go to the surface every twenty-four hours.”

Conseil had not finished the sentence before I saw what he was driving at.

“I understand,” said I; “but that calculation, though simple enough, can give but a very uncertain result.”

“Never mind,” said Ned Land urgently.

“Here it is, then,” said I. “In one hour each man consumes the oxygen contained in twenty gallons of air; and in twenty-four, that contained in 480 gallons. We must, therefore, find how many times 480 gallons of air the *Nautilus* contains.”

“Just so,” said Conseil.

“Or,” I continued, “the size of the *Nautilus* being 1,500 tons, and one ton holding 200 gallons, it contains 300,000 gallons of air, which, divided by 480, gives a quotient of 625. Which means to say, strictly speaking, that the air contained in the *Nautilus* would suffice for 625 men for twenty-four hours.”

“Six hundred and twenty-five!” repeated Ned.

“But remember, that all of us, passengers, sailors, and officers included, would not form a tenth part of that number.”

“Still too many for three men,” murmured Conseil.

The Canadian shook his head, passed his hand across his forehead, and left the room without answering.

“Will you allow me to make one observation, sir?” said Conseil. “Poor Ned is longing for everything that he cannot have. His past life is always present to him; everything that we are forbidden he regrets. His head is full of old recollections. And we must understand him. What has he to do here? Nothing; he is not learned like you, sir; and has not the same taste for the beauties of the sea that we have. He would risk everything to be able to go once more into a tavern in his own country.”

Certainly the monotony on board must seem intolerable to the Canadian, accustomed as he was to a life of liberty and activity. Events were rare which could rouse him to any show of spirit; but that day an event did happen which recalled the bright days of the harpooner. About eleven in the morning, being on the surface of the ocean, the Nautilus fell in with a troop of whales—an encounter which did not astonish me, knowing that these creatures, hunted to the death, had taken refuge in high latitudes.

We were seated on the platform, with a quiet sea. The month of October[bv] in those latitudes gave us some lovely autumnal days. It was the Canadian—he

could not be mistaken—who signaled a whale on the eastern horizon. Looking attentively one might see its black back rise and fall with the waves five miles from the Nautilus.

“Ah!” exclaimed Ned Land, “if I was on board a whaler now, such a meeting would give me pleasure. It is one of large size. See with what strength its blow-holes throw up columns of air and steam! Confound it, why am I bound to these steel plates?”

“What, Ned,” said I, “you have not forgotten your old ideas of fishing!”

“Can a whale-fisher ever forget his old trade, sir? Can he ever tire of the emotions caused by such a chase?”

“You have never fished in these seas, Ned?”

“Never, sir; in the northern only, and as much in Behring as in Davis Straits.”

“Then the southern whale is still unknown to you. It is the Greenland whale you have hunted up to this time, and that would not risk passing through the warm waters of the equator. Whales are localized according to their kinds, in certain seas which they never leave. And if one of these creatures went from Behring to Davis Straits, it must be simply because there is a passage from one sea to the other, either on the American or the Asiatic side.”

“In that case, as I have never fished in these seas, I do not know the kind of whale frequenting them.”

“I have told you, Ned.”

“A greater reason for making their acquaintance,” said Conseil.

“Look! Look!” exclaimed the Canadian. “They approach; they aggravate me; they know that I cannot get at them!”

Ned stamped his feet. His hand trembled as he grasped an imaginary harpoon.

“Are these cetacea as large as those of the northern seas?” asked he.

“Very nearly, Ned.”

“Because I have seen large whales, sir, whales measuring a hundred feet. I have been even told that those of Hullamoch and Umgallick, of the Aleutian Islands, are sometimes a hundred and fifty feet long.”[bw]

“That seems to me exaggeration. These creatures are only balænopterons, provided with dorsal fins; and, like the cachalots, are generally much smaller than the Greenland whale.”

“Ah!” exclaimed the Canadian, whose eyes had never left the ocean. “They

are coming nearer; they are in the same water as the *Nautilus!"*

Then returning to the conversation, he said:

"You spoke of the cachalot as a small creature. I have heard of gigantic ones. They are intelligent cetacea. It is said of some that they cover themselves with seaweed and fucus, and then are taken for islands. People encamp upon them, and settle there; light a fire—"

"And build houses," said Conseil.

"Yes, joker," said Ned Land. "And one fine day the creature plunges, carrying with it all the inhabitants to the bottom of the sea:"

"Something like the travels of Sindbad the Sailor," I replied, laughing.

"Ah!" suddenly exclaimed Ned Land. "It is not one whale; there are ten—there are twenty—it is a whole troop! And I not able to do anything! Hands and feet tied!"

"But, friend Ned;" said Conseil, "why do you not ask Captain Nemo's permission to chase them? "

Conseil had not finished his sentence when Ned Land had lowered himself through the panel to seek the captain. A few minutes afterward the two appeared together on the platform.

Captain Nemo watched the troop of cetacea playing on the waters about a mile from the *Nautilus.*

"They are southern whales," said he; "there goes the fortune of a whole fleet of whalers."

"Well, sir," asked the Canadian, "can I not chase them, if only to remind me of my old trade of harpooner?"

"And to what purpose?" replied Captain Nemo. "Only to destroy! We have nothing to do with whale-oil on board."

"But, sir," continued the Canadian, "in the Red Sea you allowed us to follow the dugong."

"Then it was to procure fresh meat for my crew. Here it would be killing for killing's sake. I know that is a privilege reserved for man, but I do not approve of such murderous pastime. In destroying the southern whale (like the Greenland whale, an inoffensive creature), your traders do a culpable action, Master Land. They have already depopulated the whole of Baffin's Bay, and are annihilating a class of useful animals. Leave the unfortunate cetacea alone. They have plenty of natural enemies—cachalots, swordfish, and sawfish —without *your* troubling them."

The captain was right. The barbarous and inconsiderate greed of these fishermen will one day cause the disappearance of the last whale in the ocean.

Ned Land whistled “Yankee Doodle” between his teeth, thrust his hands into his pockets, and turned his back upon us. But Captain Nemo watched the troop of cetacea, and addressing me said:

“I was right in saying that whales had natural enemies enough, without counting man. These will have plenty to do before long. Do you see, M. Aronnax, about eight miles to leeward, those blackish moving points?”

“Yes, captain,” I replied.

“Those are cachalots—terrible animals, which I have sometimes met in troops of two or three hundred. As to *those,* they are cruel, mischievous creatures; they would be right in exterminating them.”

The Canadian turned quickly at the last words.

“Well, captain,” said he, “it is still time, in the interest of the whales.”

“It is useless to expose one’s self, professor. The *Nautilus* will disperse them. It is armed with a steel spur as good as Master Land’s harpoon, I imagine.”

The Canadian did not put himself out enough to shrug his shoulders. Attack cetacea with blows of a spur! Who had ever heard of such a thing?

“Wait, M. Aronnax,” said Captain Nemo. “We will show you something you have never yet seen. We have no pity for these ferocious creatures. They are nothing but mouth and teeth.”

Mouth and teeth! No one could better describe the macrocephalous cachalot, which is sometimes more than seventy-five feet long. Its enormous head occupies one-third of its entire body. Better armed than the whale, whose upper jaw is furnished only with whale-bone, it is supplied with twenty-five large tusks, about eight inches long, cylindrical and conical at the top, each weighing two pounds. It is in the upper part of this enormous head, in great cavities divided by cartilages, that is to be found from six to eight hundred pounds of that precious oil called spermaceti. The cachalot is a disagreeable creature, more tadpole than fish, according to Fredol’s description. It is badly formed, the whole of its left side being (if we may say it) a “failure,” and being only able to see with its right eye. But the formidable troop was nearing us. They had seen the whales and were preparing to attack them. One could judge beforehand that the cachalots would be victorious, not only because they were better built for attack than their inoffensive adversaries, but also because they could remain longer underwater without coming to the surface. There was only just time to go to the help of the whales. The *Nautilus* went underwater. Conseil, Ned Land, and I took our places before the window in the saloon, and Captain Nemo joined the pilot in his cage to work his apparatus as an engine of destruction. Soon I felt the beatings of the screw quicken, and our speed increased. The battle between the cachalots and the whales had already begun when the *Nautilus* arrived. They did not at first show any fear at the sight of this new monster joining in

the conflict. But they soon had to guard against its blows. What a battle! The *Nautilus* was nothing but a formidable harpoon, brandished by the hand of its captain. It hurled itself against the fleshy mass, passing through from one part to the other, leaving behind it two quivering halves of the animal. It could not feel the formidable blows from their tails upon its sides, nor the shock which it produced itself, much more. One cachalot killed, it ran at the next, tacked on the spot that it might not miss its prey, going forward and backward, answering to its helm, plunging when the cetacean dived into the deep waters, coming up with it when it returned to the surface, striking it front or sideways, cutting or tearing in all directions, and at any pace, piercing it with its terrible spur. What carnage! What a noise on the surface of the waves! What sharp hissing, and what snorting peculiar to these enraged animals! In the midst of these waters generally so peaceful their tails made perfect billows. For one hour this wholesale massacre continued, from which the cachalots could not escape. Several times ten or twelve united tried to crush the *Nautilus* by their weight. From the window we could see their enormous mouths studded with tusks, and their formidable eyes. Ned Land could not contain himself, he threatened and swore at them. We could feel them clinging to our vessel like dogs worrying a wild boar in a copse. But the *Nautilus,* working its screw, carried them here and there, or to the upper levels of the ocean, without caring for their enormous weight, nor the powerful strain on the vessel. At length, the mass of cachalots broke up, the waves became quiet, and I felt that we were rising to the surface. The panel opened, and we hurried on to the platform. The sea was covered with mutilated bodies. A formidable explosion could not have divided and torn this fleshy mass with more violence. We were floating amid gigantic bodies, bluish on the back and white underneath, covered with enormous protuberances. Some terrified cachalots were flying toward the horizon. The waves were dyed red for several miles, and the *Nautilus* floated in a sea of blood. Captain Nemo joined us.

“Well, Master Land?” said he.

“Well, sir,” replied the Canadian, whose enthusiasm had somewhat calmed; “it is a terrible spectacle, certainly. But I am not a butcher. I am a hunter, and I call this a butchery.”

“It is a massacre of mischievous creatures,” replied the captain; “and the *Nautilus* is not a butcher’s knife.”

“I like my harpoon better,” said the Canadian.

“Everyone to his own,” answered the captain, looking fixedly at Ned Land.

I feared he would commit some act of violence, which would end in sad consequences. But his anger was turned by the sight of a whale which the *Nautilus* had just come up with. The creature had not quite escaped from the cachalot’s teeth. I recognized the southern whale by its flat head, which is entirely black. Anatomically, it is distinguished from the white whale and the North Cape whale by the seven cervical vertebrae, and it has two more ribs

than its congeners. The unfortunate cetacean was lying on its side, riddled with holes from the bites, and quite dead. From its mutilated fin still hung a young whale which it could not save from the massacre. Its open mouth let the water flow in and out, murmuring like the waves breaking on the shore. Captain Nemo steered close to the corpse of the creature. Two of his men mounted its side, and I saw, not without surprise, that they were drawing from its breasts all the milk which they contained, that is to say, about two or three tons. The captain offered me a cup of the milk, which was still warm. I could not help showing my repugnance to the drink; but he assured me that it was excellent, and not to be distinguished from cow's milk. I tasted it, and was of his opinion. It was a useful reserve to us, for in the shape of salt butter or cheese it would form an agreeable variety from our ordinary food. From that day I noticed with uneasiness that Ned Land's ill-will toward Captain Nemo increased, and I resolved to watch the Canadian's gestures closely.

Chapter XIII

The Iceberg

THE *NAUTILUS* WAS STEADILY pursuing its southerly course, following the fiftieth meridian with considerable speed. Did he wish to reach the pole? I did not think so, for every attempt to reach that point had hitherto failed. Again the season was far advanced; for in the antarctic regions the 13th of March corresponds with the 13th of September of northern regions, which begins at the equinoctial season. On the 14th of March I saw floating ice in latitude 55°, merely pale bits of debris from twenty to twenty-five feet long, forming banks over which the sea curled. The *Nautilus* remained on the surface of the ocean. Ned Land, who had fished in the arctic seas, was familiar with its icebergs; but Conseil and I admired them for the first time. In the atmosphere toward the southern horizon stretched a white dazzling band. English whalers had given it the name of "ice blink."[bx] However thick the clouds may be, it is always visible, and announces the presence of an ice-pack or bank. Accordingly, larger blocks soon appeared, whose brilliancy changed with the caprices of the fog. Some of these masses showed green veins, as if long undulating lines had been traced with sulphate of copper; others resembled enormous amethysts with the light shining through them. Some reflected the light of day upon a thousand crystal facets. Others shaded with vivid calcareous reflections resembled a perfect town of marble. The more we neared the south the more these floating islands increased both in number and importance.

At the sixtieth degree of latitude, every pass had disappeared. But seeking carefully, Captain Nemo soon found a narrow opening, through which he boldly slipped, knowing, however, that it would close behind him. Thus, guided by this clever hand, the *Nautilus* passed through all the ice with a precision which quite charmed Conseil; icebergs or mountains, ice-fields or smooth plains, seeming to have no limits, drift ice or floating ice-packs, or plains broken up, called palches when they are circular, and streams when they are made up of long strips. The temperature was very low; the thermometer exposed to the air marked two or three degrees below zero, but we were warmly clad with fur, at the expense of the sea bear and seal. The interior of the *Nautilus,* warmed regularly by its electric apparatus, defied the most intense cold. Besides, it would only have been necessary to go some yards beneath the waves to find a more bearable temperature. Two months earlier we should have had perpetual daylight in these latitudes; but already we had three or four hours night, and by and by there would be six months of darkness in these circumpolar regions. On the 15th of March we were in the

latitude of New Shetland and South Orkney. The captain told me that formerly numerous tribes of seals inhabited them; but that English and American whalers, in their rage for destruction, massacred both old and young; thus where there was once life and animation, they had left silence and death.

About eight o'clock on the morning of the 16th of March, the *Nautilus,* following the fifty-fifth meridian, cut the antarctic polar circle. Ice surrounded us on all sides, and closed the horizon. But Captain Nemo went from one opening to another, still going higher. I cannot express my astonishment at the beauties of these new regions. The ice took most surprising forms. Here the grouping formed an Oriental town, with innumerable mosques and minarets, there a fallen city thrown to the earth, as it were, by some convulsion of nature. The whole aspect was constantly changed by the oblique rays of the sun, or lost in the grayish fog amid hurricanes of snow. Detonations and falls were heard on all sides, great overthrows of icebergs, which altered the whole landscape like a diorama.[37] Often seeing no exit, I thought we were definitively prisoners; but instinct guiding him at the slightest indication, Captain Nemo would discover a new pass. He was never mistaken when he saw the thin threads of bluish water trickling along the ice-fields; and I had no doubt that he had already ventured into the midst of these antarctic seas before. On the 16th of March, however, the ice-fields absolutely blocked our road. It was not the iceberg itself, as yet, but vast fields cemented by the cold. But this obstacle could not stop Captain Nemo: he hurled himself against it with frightful violence. The *Nautilus* entered the brittle mass like a wedge, and split it with frightful crackings. It was the battering-ram of the ancients hurled by infinite strength. The ice, thrown high in the air, fell like hail around us. By its own power of impulsion our apparatus made a canal for itself; sometimes carried away by its own impetus, it lodged on the ice-field, crushing it with its weight, and sometimes buried beneath it, dividing it by a simple pitching movement, producing large rents in it. Violent gales assailed us at this time, accompanied by thick fogs, through which, from one end of the platform to the other, we could see nothing. The wind blew sharply from all points of the compass, and the snow lay in such hard heaps that we had to break it with blows of a pickaxe. The temperature was always at five degrees below zero; every outward part of the *Nautilus* was covered with ice. A rigged vessel could never have worked its way there, for all the rigging would have been entangled in the blocked-up gorges. A vessel without sails, with electricity for its motive-power, and wanting no coal, could alone brave such high latitudes. At length, on the 18th of March, after many useless assaults, the *Nautilus* was positively blocked. It was no longer either streams, packs, or ice-fields, but an interminable and immovable barrier, formed by mountains soldered together.

"An iceberg!" said the Canadian to me.

I knew that to Ned Land, as well as to all other navigators who had preceded us, this was an inevitable obstacle. The sun appearing for an instant at noon, Captain Nemo took an observation as near as possible, which gave our situation at 51° 30' longitude and 67° 39' of south latitude. We had advanced one degree more in this antarctic region. Of the liquid surface of the

sea there was no longer a glimpse. Under the spur of the *Nautilus* lay stretched a vast plain, entangled with confused blocks. Here and there sharp points, and slender needles rising to a height of 200 feet; further on a steep shore, hewn as it were with an axe, and clothed with grayish tints; huge mirrors, reflecting a few rays of sunshine, half drowned in the fog. And over this desolate face of nature a stern silence reigned, scarcely broken by the flapping of the wings of petrels and puffins. Everything was frozen—even the noise. The *Nautilus* was then obliged to stop in its adventurous course amid these fields of ice. In spite of our efforts, in spite of the powerful means employed to break up the ice, the *Nautilus* remained immovable. Generally, when we can proceed no further, we have return still open to us; but here return was as impossible as advance, for every pass had closed behind us; and for the few moments when we were stationary, we were likely to be entirelyblocked, which did, indeed, happen about two o'clock in the afternoon, the fresh ice forming around its sides with astonishing rapidity. I was obliged to admit that Captain Nemo was more than imprudent. I was on the platform at that moment. The captain had been observing our situation for some time past, when he said to me:

"Well, sir, what do you think of this?"

"I think that we are caught, captain."

"So, M. Aronnax, you really think that the *Nautilus* cannot disengage itself?"

"With difficulty, captain; for the season is already too far advanced for you to reckon on the breaking up of the ice."

"Ah! sir," said Captain Nemo, in an ironical tone, "you will always be the same. You see nothing but difficulties and obstacles. I affirm that not only can the *Nautilus* disengage itself, but also that it can go further still."

"Further to the south?" I asked, looking at the captain.

"Yes, sir; it shall go to the pole."

"To the pole!" I exclaimed, unable to repress a gesture of incredulity.

"Yes," replied the captain coldly, "to the antarctic pole, to that unknown point from whence springs every meridian of the globe. You know whether I can do as I please with the *Nautilus*!"

Yes, I knew that. I knew that this man was bold, even to rashness. But to conquer those obstacles which bristled round the South Pole, rendering it more inaccessible than the north, which had not yet been reached by the boldest navigators—was it not a mad enterprise, one which only a maniac would have conceived? It then came into my head to ask Captain Nemo if he had ever discovered that pole which had never yet been trodden by a human creature.

"No, sir," he replied; "but we will discover it together. Where others have failed, *I* will not fail. I have never yet led my *Nautilus* so far into southern seas;

but I repeat, it shall go further yet."

"I can well believe you, captain," said I, in a slightly ironical tone. "I believe you! Let us go ahead! There are no obstacles for us! Let us smash this iceberg! Let us blow it up; and if it resists, let us give the *Nautilus* wings to fly over it!"

"Over it, sir!" said Captain Nemo quietly. "No, not *over* it, but *under* it!"by

"Under it!" I exclaimed, a sudden idea of the captain's projects flashing upon my mind. I understood the wonderful qualities of the *Nautilus* were going to serve us in this super-human enterprise.

"I see we are beginning to understand one another, sir," said the captain, half smiling. "You begin to see the possibility—I should say the success—of this attempt. That which is impossible for an ordinary vessel, is easy to the *Nautilus.* If a continent lies before the pole, it must stop before the continent; but, if, on the contrary, the pole is washed by open sea, it will go even to the pole."

"Certainly," said I, carried away by the captain's reasoning; "if the surface of the sea is solidified by the ice, the lower depths are free by the providential law which has placed the maximum of density of the waters of the ocean one degree higher than freezing-point; and, if I am not mistaken, the portion of this iceberg which is above the water is as one to four to that which is below."

"Very nearly, sir; for one foot of iceberg above the sea there are three below it. If these ice mountains are not more than 300 feet above the surface, they are not more than 900 beneath. And what are 900 feet to the *Nautilus?"*

"Nothing, sir."

"It could even seek at greater depths that uniform temperature of seawater, and there brave with impunity the thirty or forty degrees of surface cold."

"Just so, sir—just so," I replied, getting animated.

"The only difficulty," continued Captain Nemo, "is that of remaining several days without renewing our provision of air."

"Is that all? The *Nautilus* has vast reservoirs; we can fill them, and they will supply us with all the oxygen we want."

"Well thought of, M. Aronnax," replied the captain, smiling. "But not wishing you to accuse me of rashness, I will first give you all my objections."

"Have you any more to make?"

"Only one. It is possible, if the sea exists at the South Pole, that it may be covered; and, consequently, we shall be unable to come to the surface."

"Good, sir! but do you forget that the *Nautilus* is armed with a powerful

spur, and could we not send it diagonally against these fields of ice, which would open at the shock?"

"Ah! sir, you are full of ideas to-day."

"Besides, captain," I added enthusiastically, "why should we not find the sea open at the South Pole as well as at the North? The frozen poles and the poles of the earth do not coincide, either in the southern or in the northern regions; and, until it is proved to the contrary, we may suppose either a continent or an ocean free from ice at these two points of the globe."

"I think so, too, M. Aronnax," replied Captain Nemo. "I only wish you to observe that, after having made so many objections to my project, you are now crushing me with arguments in its favor!"

The preparations for this audacious attempt now began. The powerful pumps of the *Nautilus* were working air into the reservoirs and storing it at high pressure. About four o'clock, Captain Nemo announced the closing of the panels on the platform. I threw one last look at the massive iceberg which we were going to cross. The weather was clear, the atmosphere was pure enough, the cold very great, being twelve degrees below zero; but the wind having gone down, this temperature was not so unbearable. About ten men mounted the sides of the *Nautilus,* armed with pickaxes to break the ice around the vessel, which was soon free. The operation was quickly performed, for the fresh ice was still very thin. We all went below. The usual reservoirs were filled with the newly liberated water, and the *Nautilus* soon descended. I had taken my place with Conseil in the saloon; through the open window we could see the lower beds of the Southern Ocean. The thermometer went up, the needle of the compass deviated on the dial. At about 900 feet, as Captain Nemo had foreseen, we were floating beneath the undulating bottom of the iceberg. But the *Nautilus* went lower still—it went to the depth of four hundred fathoms. The temperature of the water at the surface showed twelve degrees, it was now only ten; we had gained two. I need not say the temperature of the *Nautilus* was raised by its heating apparatus to a much higher degree; every maneuver was accomplished with wonderful precision.

"We shall pass it, if you please, sir," said Conseil.

"I believe we shall," I said in a tone of firm conviction.

In this open sea, the *Nautilus* had taken its course direct to the pole, without leaving the fifty-second meridian. From 67° 30' to 90°, twenty-two degrees and a half of latitude remained to travel; that is, about five hundred leagues. The *Nautilus* kept up a mean speed of twenty-six miles an hour—the speed of an express train. If that was kept up, in forty hours we should reach the pole.

For a part of the night the novelty of the situation kept us at the window. The sea was lit with the electric lantern; but it was deserted; fishes did not sojourn in these imprisoned waters; they only found there a passage to take them from the Antarctic Ocean to the open polar sea. Our progress was rapid;

we could feel it by the quivering of the long steel body. About two in the morning, I took some hours' repose, and Conseil did the same. In crossing the waist I did not meet Captain Nemo: I supposed him to be in the pilot's cage. The next morning, the 19th of March, I took my post once more in the saloon. The electric log told me that the speed of the *Nautilus* had been slackened. It was then going toward the surface, but prudently emptying its reservoirs very slowly. My heart beat fast. Were we going to emerge and regain the open polar atmosphere? No! A shock told me that the *Nautilus* had struck the bottom of the iceberg, still very thick, judging from the deadened sound. We had indeed "struck," to use a sea expression, but in an inverse sense, and at a thousand feet deep. This would give three thousand feet of ice above us; one thousand being above the water-mark. The iceberg was then higher than at its borders—not a very reassuring fact. Several times that day the *Nautilus* tried again, and every time it struck the wall which lay like a ceiling above it. Sometimes it met with but 900 yards, only 200 of which rose above the surface. It was twice the height it was when the *Nautilus* had gone under the waves. I carefully noted the different depths, and thus obtained a submarine profile of the chain as it was developed under the water. That night no change had taken place in our situation. Still ice between four and five hundred yards in depth! It was evidently diminishing, but still what a thickness between us and the surface of the ocean! It was then eight. According to the daily custom on board the *Nautilus,* its air should have been renewed four hours ago; but I did not suffer much, although Captain Nemo had not yet made any demand upon his reserve of oxygen. My sleep was painful that night; hope and fear besieged me by turns: I rose several times. The groping of the *Nautilus* continued. About three in the morning, I noticed that the lower surface of the iceberg was only about fifty feet deep. One hundred and fifty feet now separated us from the surface of the waters. The iceberg was by degrees becoming an ice-field, the mountain a plain. My eyes never left the manometer. We were still rising diagonally to the surface, which sparkled under the electric rays. The iceberg was stretching both above and beneath into lengthening slopes; mile after mile it was getting thinner. At length, at six in the morning of that memorable day, the 19th of March, the door of the saloon opened, and Captain Nemo appeared.

"The sea is open!" was all he said.

Chapter XIV

The South Pole

I RUSHED ON TO the platform. Yes! the open sea, with but a few scattered pieces of ice and moving icebergs—a long stretch of sea; a world of birds in the air, and myriads of fishes under those waters, which varied from intense blue to olive-green, according to the bottom. The thermometer marked three degrees centigrade above zero. It was comparatively spring, shut up as we were behind this iceberg, whose lengthened mass was dimly seen on our northern horizon.

"Are we at the pole?" I asked the captain, with a beating heart.

"I do not know," he replied. "At noon I will take our bearings."

"But will the sun show himself through this fog?" said I, looking at the leaden sky.

"However little it shows, it will be enough," replied the captain.

About ten miles south, a solitary island rose to a height of one hundred and four yards. We made for it, but carefully, for the sea might be strewn with banks. One hour afterward we had reached it, two hours later we had made the round of it. It measured four or five miles in circumference. A narrow canal separated it from a considerable stretch of land, perhaps a continent, for we could not see its limits. The existence of this land seemed to give some color to Maury's hypothesis. The ingenious American has remarked that between the South Pole and the sixtieth parallel, the sea is covered with floating ice of enormous size, which is never met with in the North Atlantic. From this fact he has drawn the conclusion that the Antarctic Circle incloses considerable continents, as icebergs cannot form in open sea, but only on the coasts. According to these calculations, the mass of ice surrounding the southern pole forms a vast cap, the circumference of which must be, at least, 2,500 miles. But the *Nautilus,* for fear of running aground, had stopped about three cables' length from a strand over which reared a superb heap of rocks. The boat was launched; the captain, two of his men bearing instruments, Conseil, and myself were in it. It was ten in the morning. I had not seen Ned Land. Doubtless the Canadian did not wish to admit the presence of the South Pole.[38] A few strokes of the oar brought us to the sand, where we ran ashore. Conseil was going to jump on to the land, when I held him back.

"Sir," said I to Captain Nemo, "to you belongs the honor of first setting

foot on this land."

"Yes, sir," said the captain; "and if I do not hesitate to tread this South Pole, it is because, up to this time, no human being has left a trace there."

Saying this, he jumped lightly on to the sand. His heart beat with emotion. He climbed a rock, sloping to a little promontory, and there, with his arms crossed, mute and motionless, and with an eager look, he seemed to take possession of these southern regions. After five minutes passed in this ecstasy, he turned to us.

"When you like, sir."

I landed, followed by Conseil, leaving the two men in the boat. For a long way the soil was composed of a reddish, sandy stone, something like crushed brick, scoriæ, streams of lava, and pumice-stones. One could not mistake its volcanic origin. In some parts, slight curls of smoke emitted a sulphurous smell, proving that the internal fires had lost nothing of their expansive powers, though, having climbed a high acclivity, I could see no volcano for a radius of several miles. We know that in those antarctic countries, James Ross found two craters, the Erebus[bz] and Terror, in full activity, on the 167th meridian, latitude 77° 32'. The vegetation of this desolate continent seemed to me much restricted. Some lichens of the species usnea melanoxantha lay upon the black rocks; some microscopic plants, rudimentary diatomas, a kind of cells, placed between two quartz shells; long purple and scarlet fucus, supported on little swimming bladders, which the breaking of the waves brought to the shore. These constituted the meager flora of this region. The shore was strewn with mollusks, little mussels, limpets, smooth bucards in the shape of a heart, and particularly some clios, with oblong membranous bodies, the head of which was formed of two rounded lobes. I also saw myriads of northern clios, one and a quarter inches long, of which a whale would swallow a whole world at a mouthful; and some charming pteropods, perfect sea-butterflies, animating the waters on the skirts of the shore.

Among other zoöphytes, there appeared on the high bottoms some coral shrubs, of that kind which, according to James Ross, live in the antarctic seas to the depth of more than 1,000 yards. Then there were little kingfishers, belonging to the species procellaria pelagica, as well as a large number of asteriads, peculiar to these climates, and starfish studding the soil. But where life abounded most was in the air. There thousands of birds fluttered and flew of all kinds, deafening us with their cries; others crowded the rocks, looking at us as we passed by without fear, and pressing familiarly close by our feet. There were penguins, so agile in the water that they have been taken for the rapid bonitos, heavy and awkward as they are on the ground; they were uttering harsh cries, a large assembly, sober in gesture, but extravagant in clamor. Among the birds I noticed the chionis, of the long-legged family, as large as pigeons, white, with a short conical beak, and the eye framed in a red circle. Conseil laid in a stock of them, for these winged creatures, properly prepared, make an agreeable meat. Albatrosses passed in the air (the expanse of their wings being at least four yards and a half), and justly called the

vultures of the ocean; some gigantic petrels, and some damiers, a kind of small duck, the underpart of whose body is black and white; then there were a whole series of petrels, some whitish with brown-bordered wings, others blue, peculiar to the antarctic seas, and so oily, as I told Conseil, that the inhabitants of the Ferroe Islands had nothing to do before lighting them, but to put a wick in.

"A little more," said Conseil, "and they would be perfect lamps! After that, we cannot expect nature to have previously furnished them with wicks!"

About half a mile further on, the soil was riddled with ruff's nests, a sort of laying ground, out of which many birds were issuing. Captain Nemo had some hundreds hunted. They uttered a cry like the braying of an ass, were about the size of a goose, slate color on the body, white beneath, with a yellow line round their throats; they allowed themselves to be killed with a stone, never trying to escape. But the fog did not lift, and at eleven the sun had not yet shown itself. Its absence made me uneasy. Without it no observations were possible. How then could we decide whether we had reached the pole? When I rejoined Captain Nemo, I found him leaning on a piece of rock, silently watching the sky. He seemed impatient and vexed. But what was to be done? This rash and powerful man could not command the sun as he did the sea. Noon arrived without the orb of day showing itself for an instant. We could not even tell its position behind the curtain of fog; and soon the fog turned to snow.

"Till to-morrow," said the captain quietly, and we returned to the *Nautilus* amid these atmospheric disturbances.

The tempest of snow continued till the next day. It was impossible to remain on the platform. From the saloon, where I was taking notes of incidents happening during this excursion to the polar continent, I could hear the cries of petrels and albatrosses sporting in the midst of this violent storm. The *Nautilus* did not remain motionless, but skirted the coast, advancing ten miles more to the south in the half-light left by the sun as it skirted the edge of the horizon. The next day, the 20th of March, the snow had ceased. The cold was a little greater, the thermometer showing two degrees below zero. The fog was rising, and I hoped that that day our observations might be taken. Captain Nemo not having yet appeared, the boat took Conseil and myself to land. The soil was still of the same volcanic nature; everywhere were traces of lava, scoriae, and basalt, but the crater which had vomited them I could not see. Here, as lower down, this continent was alive with myriads of birds; but their rule was now divided with large troops of sea-mammals, looking at us with their soft eyes. There were several kinds of seals, some stretched on the earth, some on flakes of ice, many going in and out of the sea. They did not flee at our approach, never having had anything to do with man; and I reckoned that there were provisions there for hundreds of vessels.

"Sir," said Conseil, "will you tell me the names of these creatures?"

"They are seals and morses."

It was now eight in the morning. Four hours remained to us before the sun could be observed with advantage. I directed our step toward a vast bay cut in the steep granite shore. There, I can aver that earth and ice were lost to sight by the numbers of sea-mammals covering them, and I involuntarily sought for old Proteus, the mythological shepherd who watched these immense flocks of Neptune. There were more seals than anything else, forming distinct groups, male and female, the father watching over his family, the mother suckling her little ones, some already strong enough to go a few steps. When they wished to change their place, they took little jumps, made by the contraction of their bodies, and helped awkwardly enough by their imperfect fin, which, as with the lamantin, their congener, forms a perfect forearm. I should say that in the water, which is their element—the spine of these creatures is flexible—with smooth and close skin and webbed feet, they swim admirably. In resting on the earth they take the most graceful attitudes. Thus the ancients, observing their soft and expressive looks, which cannot be surpassed by the most beautiful look a woman can give, their clear voluptuous eyes, their charming positions, and the poetry of their manners, metamorphosed them, the male into a triton and the female into a mermaid. I made Conseil notice the considerable development of the lobes of the brain in these interesting cetaceans. No mammal, except man, has such a quantity of cerebral matter; they are also capable of receiving a certain amount of education, are easily domesticated, and I think, with other naturalists, that, if properly taught, they would be of great service as fishing-dogs. The greater part of them slept on the rocks or on the sand. Among these seals, properly so called, which have no external ears (in which they differ from the otter, whose ears are prominent), I noticed several varieties of stenorhynchi about three yards long, with a white coat, bulldog heads, armed with teeth in both jaws, four incisors at the top and four at the bottom, and two large canine teeth in the shape of a “fleur de lis.”[ca] Among them glided sea-elephants, a kind of seal, with short flexible trunks. The giants of this species measured twenty feet round, and ten yards and a half in length; but they did not move as we approached.

“These creatures are not dangerous?” asked Conseil.

“No; not unless you attack them. When they have to defend their young, their rage is terrible, and it is not uncommon for them to break the fishing-boats to pieces.”

“They are quite right,” said Conseil.

“I do not say they are not.”

Two miles further on we were stopped by the promontory which shelters the bay from the southerly winds. Beyond it we heard loud bellowings such as a troop of ruminants would produce.

“Good!” said Conseil. “A concert of bulls!”

“No; a concert of morses.”

“They are fighting!”

“They are either fighting or playing.”

We now began to climb the blackish rocks, amid unforeseen stumbles, and over stones which the ice made slippery. More than once I rolled over, at the expense of my loins. Conseil, more prudent or more steady, did not stumble, and helped me up, saying:

“If, sir, you would have the kindness to take wider steps, you would preserve your equilibrium better.”

Arrived at the upper ridge of the promontory, I saw a vast white plain covered with morses. They were playing among themselves, and what we heard were bellowings of pleasure, not of anger.

As I passed near these curious animals, I could examine them leisurely, for they did not move, Their skins were thick and rugged, of a yellowish tint, approaching to red; their hair was short and scant. Some of them were four yards and a quarter long. Quieter and less timid than their congeners of the north, they did not, like them, place sentinels round the outskirts of their encampment. After examining this city of morses, I began to think of returning. It was eleven o’clock, and if Captain Nemo found the conditions favorable for observations, I wished to be present at the operation. We followeda narrow pathway running along the summit of the steep shore. At half-past eleven we had reached the place where we landed. The boat had run aground bringing the captain. I saw him standing on a block of basalt, his instruments near him, his eyes fixed on the northern horizon, near which the sun was then describing a lengthened curve. I took my place beside him, and waited without speaking. Noon arrived, and, as before, the sun did not appear. It was a fatality. Observations were still wanting. If not accomplished tomorrow, we must give up all idea of taking any. We were indeed exactly at the 20th of March. To-morrow, the 21 st, would be the equinox: the sun would disappear behind the horizon for six months, and with its disappearance the long polar night would begin. Since the September equinox it had emerged from the northern horizon, rising by lengthened spirals up to the 21 st of December. At this period, the summer solstice of the northern regions, it had begun to descend, and tomorrow was to shed its last rays upon them. I communicated my fears and observations to Captain Nemo.

“You are right, M. Aronnax,” said he, “if to-morrow I cannot take the altitude of the sun, I shall not be able to do it for six months. But precisely because chance has led me into these seas on the 21st of March, my bearings will be easy to take, if at twelve we can see the sun.”

“Why, captain?”

“Because then the orb of day describes such lengthened curves, that it is difficult to measure exactly its height above the horizon, and grave errors may be made with instruments.”

“What will you do then?”

“I shall only use my chronometer,” replied Captain Nemo. “If tomorrow, the 21st of March, the disk of the sun, allowing for refraction, is exactly cut by the northern horizon, it will show that I am at the South Pole.”

“Just so,” said I. “But this statement is not mathematically correct, because the equinox does not necessarily begin at noon.”

“Very likely, sir; but the error will not be a hundred yards, and we do not want more. Till to-morrow then!”

Captain Nemo returned on board. Conseil and I remained to surveythe shore, observing and studying until five o’clock. Then I went to bed, not, however, without invoking, like the Indian, the favor of the radiant orb. The next day, the 21 st of March, at five in the morning, I mounted the platform. I found Captain Nemo there.

“The weather is lightening a little,” said he. “I have some hope. After breakfast we will go on shore, and choose a post for observation.”

That point settled, I sought Ned Land. I wanted to take him with me. But the obstinate Canadian refused, and I saw that his taciturnity and his bad humor grew day by day. After all I was not sorry for his obstinacy under the circumstances. Indeed, there were too many seals on shore, and we ought not to lay such temptations in this unreflecting fisherman’s way. Breakfast over, we went on shore. The *Nautilus* had gone some miles further up in the night. It was a whole league from the coast, above which reared a sharp peak about five hundred yards high. The boat took with me Captain Nemo, two men of the crew, and the instruments, which consisted of a chronometer, a telescope, and a barometer. While crossing, I saw numerous whales belonging to the three kinds peculiar to the southern seas: the whale, or the English “right whale,” which has no dorsal fin; the “humpback,” or balænopteron, with reeved chest, and large whitish fins, which, in spite of its name, do not form wings; and the finback, of a yellowish-brown, the liveliest of all the cetacea. This powerful creature is heard a long way off when he throws to a great height columns of air and vapor, which look like whirlwinds of smoke. These different mammals were disporting themselves in troops in the quiet waters; and I could see that this basin of the Antarctic Pole served as a place of refuge to the cetacea too closely tracked by the hunters. I also noticed long whitish lines of salpæ, a kind of gregarious mollusk, and large medusæ floating between the reeds.

At nine we landed; the sky was brightening, the clouds were flying to the south, and the fog seemed to be leaving the cold surface of the waters. Captain Nemo went toward the peak, which he doubtless meant to be his observatory. It was a painful ascent over the sharp lava and the pumice-stones, in an atmosphere often impregnated with a sulphurous smell from the smoking cracks. For a man unaccustomed to walk on land, the captain climbed the steep slopes with an agility I never saw equaled, and which a hunter would have envied. We were two hours getting to the summit of this peak, which was half porphyry and half basalt. From thence we looked upon a vast sea,

which, toward the north, distinctly traced its boundary line upon the sky. At our feet lay fields of dazzling whiteness. Over our heads a pale azure, free from fog. To the north the disk of the sun seemed like a ball of fire, already horned by the cutting of the horizon. From the bosom of the water rose sheaves of liquid jets by hundreds. In the distance lay the *Nautilus* like a cetacean asleep on the water. Behind us, to the south and east, an immense country, and a chaotic heap of rocks and ice, the limits of which were not visible. On arriving at the summit, Captain Nemo carefully took the mean height of the barometer, for he would have to consider that in taking his observations. At a quarter to twelve, the sun, then seen only by refraction, looked like a golden disk shedding its last rays upon this deserted continent, and seas which never man had yet plowed. Captain Nemo, furnished with a lenticular glass, which, by means of a mirror, corrected the refraction, watched the orb sinking below the horizon by degrees, following a lengthened diagonal. I held the chronometer. My heart beat fast. If the disappearance of the half-disk of the sun coincided with twelve o'clock on the chronometer, we were at the pole itself.

"Twelve!" I exclaimed.

"The South Pole!" replied Captain Nemo, in a grave voice, handing me the glass, which showed the orb cut in exactly equal parts by the horizon.

I looked at the last rays crowning the peak, and the shadows mounting by degrees up its slopes. At that moment Captain Nemo, resting with his hand on my shoulder, said:

"I, Captain Nemo, on this 21st day of March, 1868, have reached the South Pole on the ninetieth degree; and I take possession of this part of the globe, equal to one-sixth of the known continents."

"In whose name, captain?"

"In my own, sir!"

Saying which, Captain Nemo unfurled a black banner, bearing an N in gold quartered on its bunting. Then turning toward the orb of day, whose last rays lapped the horizon of the sea, he exclaimed:

"Adieu, sun! Disappear, thou radiant orb! Rest beneath this open sea, and let a night of six months spread its shadows over my new domains!"

Chapter XV

Accident or Incident?

THE NEXT DAY, THE 22d of March, at six in the morning, preparations for departure were begun. The last gleams of twilight were melting into night. The cold was great; the constellations shone with wonderful intensity. In the zenith glittered that wondrous Southern Cross—the polar bear of antarctic regions. The thermometer showed twelve degrees below zero, and when the wind freshened, it was most biting. Flakes of ice increased on the open water. The sea seemed everywhere alike. Numerous blackish patches spread on the surface, showing the formation of fresh ice. Evidently the southern basin, frozen during the six winter months, was absolutely inaccessible. What became of the whales in that time? Doubtless they went beneath the icebergs, seeking more practicable seas. As to the seals and morses, accustomed to live in a hard climate, they remained on these icy shores. These creatures have the instinct to break holes in the ice-fields, and to keep them open. To these holes they come for breath; when the birds, driven away by the cold, have emigrated to the north, these sea mammals remain sole masters of the polar continent. But the reservoirs were filling with water, and the *Nautilus* was slowly descending. At 1,000 feet deep it stopped; its screw beat the waves, and it advanced straight toward the north, at a speed of fifteen miles an hour. Toward night it was already floating under the immense body of an iceberg. At three in the morning I was awakened by a violent shock. I sat up in my bed and listened in the darkness, when I was thrown into the middle of the room. The *Nautilus,* after having struck, had rebounded violently. I groped along the partition, and by the staircase to the saloon, which was lit by the luminous ceiling. The furniture was upset. Fortunately the windows were firmly set, and had held fast. The pictures on the starboard side, from being no longer vertical, were clinging to the paper, while those of the port side were hanging at least a foot from the wall. The *Nautilus* was lying on its starboard side perfectly motionless. I heard footsteps, and a confusion of voices; but Captain Nemo did not appear. As I was leaving the saloon, Ned Land and Conseil entered.

“What is the matter?” said I, at once.

“I came to ask you, sir,” said Conseil.

“Confound it!” exclaimed the Canadian, “I know well enough! The *Nautilus* has struck; and judging by the way she lies, I do not think she will right herself as she did the first time in Torres Straits.”

“But,” I asked, “has she at least come to the surface of the sea?”

“We do not know,” said Conseil.

“It is easy to decide,” I answered. I consulted the manometer. To my great surprise it showed a depth of more than 180 fathoms. “What does that mean?” I exclaimed.

“We must ask Captain Nemo,” said Conseil.

“But where shall we find him?” said Ned Land.

“Follow me,” said I to my companions.

We left the saloon. There was no one in the library. At the center staircase, by the berths of the ship’s crew, there was no one. I thought that Captain Nemo must be in the pilot’s cage. It was best to wait. We all returned to the saloon. For twenty minutes we remained thus, trying to hear the slightest noise which might be made on board the *Nautilus,* when Captain Nemo entered. He seemed not to see us; his face, generally so impassive, showed signs of uneasiness. He watched the compass silently, then the manometer; and going to the planisphere, placed his finger on the spot representing the southern seas. I would not interrupt him; but, some minutes later, when he turned toward me, I said, using one of his own expressions in the Torres Straits:

“An incident, captain?”

“No, sir; an accident this time.”

“Serious?”

“Perhaps.”

“Is the danger immediate?”

“No.”

“The *Nautilus* has stranded?”

“Yes.”

“And this has happened—how?”

“From a caprice of nature, not from the ignorance of man. Not a mistake has been made in the working. But we cannot prevent equilibrium from producing its effects. We may brave human laws, but we cannot resist natural ones.”

Captain Nemo had chosen a strange moment for uttering this philosophical reflection. On the whole, his answer helped me little.

“May I ask, sir, the cause of this accident?”

“An enormous block of ice, a whole mountain, has turned over,” he replied. “When icebergs are undermined at their base by warmer water or reiterated shocks, their center of gravity rises, and the whole thing turns over. This is what has happened; one of these blocks, as it fell, struck the *Nautilus,* then, gliding under its hull, raised it with irresistible force, bringing it into beds which are not so thick, where it is lying on its side.”

“But can we not get the *Nautilus* off by emptying its reservoirs, that it may regain its equilibrium?”

“That, sir, is being done at this moment. You can hear the pump working. Look at the needle of the manometer; it shows that the *Nautilus* is rising, but the block of ice is rising with it; and, until some obstacle stops its ascending motion, our position cannot be altered.”

Indeed, the *Nautilus* still held the same position to starboard; doubtless it would right itself when the block stopped. But at this moment who knows if we may not strike the upper part of the iceberg, and if we may not be frightfully crushed between the two glassy surfaces? I reflected on all the consequences of our position. Captain Nemo never took his eyes off the manometer. Since the fall of the iceberg, the *Nautilus* had risen about a hundred and fifty feet, but it still made the same angle with the perpendicular. Suddenly a slight movement was felt in the hold. Evidently it was righting a little. Things hanging in the saloon were sensibly returning to their normal position. The partitions were nearing the upright. No one spoke. With beating hearts we watched and felt the straightening. The boards became horizontal under our feet. Ten minutes passed.

“At last we have righted!” I exclaimed.

“Yes,” said Captain Nemo, going to the door of the saloon.

“But are we floating?” I asked.

“Certainly,” he replied; “since the reservoirs are not empty; and, when empty, the *Nautilus* must rise to the surface of the sea.”

We were in open sea; but at a distance of about ten yards, on either side of the *Nautilus,* rose a dazzling wall of ice. Above and beneath the same wall: above, because the lower surface of the iceberg stretched over us like an immense ceiling: beneath, because the overturned block, having slid by degrees, had found a resting-place on the lateral walls, which kept it in that position. The *Nautilus* was really imprisoned in a perfect tunnel of ice more than twenty yards in breadth, filled with quiet water. It was easy to get out of it by going either forward or backward, and then make a free passage under the iceberg, some hundreds of yards deeper. The luminous ceiling had been extinguished, but the saloon was still resplendent with intense light. It was the powerful reflection from the glass partition sent violently back to the sheets of the lantern. I cannot describe the effect of the voltaic rays upon the great blocks so capriciously cut; upon every angle, every ridge, every facet, was thrown a different light, according to the nature of the veins running through

the ice; a dazzling mine of gems, particularly of sapphires, their blue rays crossing with the green of the emerald. Here and there were opal shades of wonderful softness, running through bright spots like diamonds of fire, the brilliancy of which the eye could not bear. The power of the lantern seemed increased a hundredfold, like a lamp through the lenticular plates of a first-class lighthouse.

"How beautiful! How beautiful!" cried Conseil.

"Yes," I said, "it is a wonderful sight. Is it not, Ned?"

"Yes, confound it! Yes," answered Ned Land, "it is superb! I am mad at being obliged to admit it. No one has ever seen anything like it; but the sight may cost us dear. And if I must say all, I think we are seeing here things which God never intended man to see."

Ned was right, it was too beautiful. Suddenly a cry from Conseil made me turn.

"What is it?" I asked.

"Shut your eyes, sir! Do not look, sir!" Saying which, Conseil clapped his hands over his eyes.

"But what is the matter, my boy?"

"I am dazzled, blinded."

My eyes turned involuntarily toward the glass, but I could not stand the fire which seemed to devour them. I understood what had happened. The *Nautilus* had put on full speed. All the quiet luster of the ice-walls was at once changed into flashes of lightning. The fire from these myriads of diamonds was blinding. It required some time to calm our troubled looks. At last the hands were taken down.

"Faith, I should never have believed it," said Conseil.

It was then five in the morning; and at that moment a shock was felt at the bows of the *Nautilus.* I knew that its spur had struck a block of ice. It must have been a false maneuver, for this submarine tunnel, obstructed by blocks, was not very easy navigation. I thought that Captain Nemo, by changing his course, would either turn these obstacles, or else follow the windings of the tunnel. In any case, the road before us could not be entirely blocked. But, contrary to my expectations, the *Nautilus* took a decided retrograde motion.

"We are going backward?" said Conseil.

"Yes," I replied. "This end of the tunnel can have no egress."

"And then?"

"Then," said 1, "the working is easy. We must go back again, and go out at the southern opening. That is all."

In speaking thus, I wished to appear more confident than I really was. But the retrograde motion of the *Nautilus* was increasing: and, reversing the screw, it carried us at great speed.

“It will be a hindrance,” said Ned.

“What does it matter, some hours more or less, provided we get out at last?”

“Yes,” repeated Ned Land, “provided we do get out at last!”

For a short time I walked from the saloon to the library. My companions were silent. I soon threw myself on an ottoman, and took a book, which my eyes overran mechanically. A quarter of an hour after, Conseil, approaching me, said, “Is what you are reading very interesting, sir?”

“Very interesting!” I replied.

“I should think so, sir. It is your own book you are reading.”

“My book?”

And indeed I was holding in my hand the work on the Great *Submarine Depths*. I did not even dream of it. I closed the book, and returned to my walk. Ned and Conseil rose to go.

“Stay here, my friends,” said I, detaining them. “Let us remain together until we are out of this block.”

“As you please, sir,” Conseil replied.

Some hours passed. I often looked at the instruments hanging from the partition. The manometer showed that the *Nautilus* kept at a constant depth of more than three hundred yards; the compass still pointed to the south; the log indicated a speed of twenty miles an hour, which, in such a cramped space, was very great. But Captain Nemo knew that he could not hasten too much, and that minutes were worth ages to us. At twenty-five minutes past eight a second shock took place, this time from behind. I turned pale. My companions were close by my side. I seized Conseil’s hand. Our looks expressed our feelings better than words. At this moment the captain entered the saloon. I went up to him.

“Our course is barred southward?” I asked.

“Yes, sir. The iceberg has shifted, and closed every outlet.”

“We are blocked up, then?”

“Yes.”

Chapter XVI

Want of Air

THUS, AROUND THE *NAUTILUS,* above and below, was an impenetrable wall of ice. We were prisoners to the iceberg. I watched the captain. His countenance had resumed its habitual imperturbability.

"Gentlemen," he said calmly, "there are two ways of dying in the circumstances in which we are placed." (This inexplicable person had the air of a mathematical professor lecturing to his pupils.) "The first is to be crushed; the second is to die of suffocation. I do not speak of the possibility of dying of hunger, for the supply of provisions in the *Nautilus* will certainly last longer than we shall. Let us then calculate our chances."

"As to suffocation, captain," I replied, "that is not to be feared, because our reservoirs are full."

"Just so; but they will only yield two days' supply of air. Now, for thirty-six hours we have been hidden under the water, and already the heavy atmosphere of the *Nautilus* requires renewal. In forty-eight hours our reserve will be exhausted."

"Well, captain, can we be delivered before forty-eight hours?"

"We will attempt it, at least, by piercing the wall that surrounds us."

"On which side?"

"Sound will tell us. I am going to run the *Nautilus* aground on the lower bank, and my men will attack the iceberg on the side that is least thick."

Captain Nemo went out. Soon I discovered by a hissing noise that the water was entering the reservoirs. The *Nautilus* sank slowly, and rested on the ice at a depth of 350 yards, the depth at which the lower bank was immersed.

"My friends," I said, "our situation is serious, but I rely on your courage and energy."

"Sir," replied the Canadian, "I am ready to do anything for the general safety."

"Good, Ned!" and I held out my hand to the Canadian.

"I will add," he continued, "that being as handy with the pickaxe as with

the harpoon, if I can be useful to the captain, he can command my services."

"He will not refuse your help. Come, Ned!"

I led him to the room where the crew of the *Nautilus* were putting on their cork-jackets. I told the captain of Ned's proposal, which he accepted. The Canadian put on his sea-costume, and was ready as soon as his companions. When Ned was dressed, I reentered the drawing-room, where the panes of glass were open, and, posted near Conseil, I examined the ambient beds that supported the *Nautilus.* Some instants after, we saw a dozen of the crew set foot on the bank of ice, and among them Ned Land, easily known by his stature. Captain Nemo was with them. Before proceeding to dig the walls, he took the soundings, to be sure of working in the right direction. Long sounding-lines were sunk in the side walls, but after fifteen yards they were again stopped by the thick wall. It was useless to attack it on the ceiling-like surface, since the iceberg itself measured more than 400 yards in height. Captain Nemo then sounded the lower surface. There ten yards of wall separated us from the water, so great was the thickness of the ice-field. It was necessary, therefore, to cut from it a piece equal in extent to the water-line of the *Nautilus.* There was about 6,000 cubic yards to detach, so as to dig a hole by which we could descend to the ice-field. The work was begun immediately, and carried on with indefatigable energy. Instead of digging round the *Nautilus,* which would have involved greater difficulty, Captain Nemo had an immense trench made at eight yards from the port quarter. Then the men set to work simultaneously with their screws on several points of its circumference. Presently the pickaxe attacked this compact matter vigorously, and large blocks were detached from the mass. By a curious effect of specific gravity, these blocks, lighter than water, fled, so to speak, to the vault of the tunnel, that increased in thickness at the top in proportion as it diminished at the base. But that mattered little, so long as the lower part grew thinner. After two hours' hard work, Ned Land came in exhausted. He and his comrades were replaced by new workers, whom Conseil and I joined. The second lieutenant of the Nautilus superintended us. The water seemed singularly cold, but I soon got warm handling the pickaxe. My movements were free enough, although they were made under a pressure of thirty atmospheres. When I reentered, after working two hours, to take some food and rest, I found a perceptible difference between the pure fluid with which the Rouquayrol engine supplied me, and the atmosphere of the *Nautilus,* already charged with carbonic acid. The air had not been renewed for forty-eight hours, and its vivifying qualities were considerably enfeebled. However, after a lapse of twelve hours, we had only raised a block of ice one yard thick, on the marked surface, which was about 600 cubic yards! Reckoning that it took twelve hours to accomplish this much, it would take five nights and four days to bring this enterprise to a satisfactory conclusion. Five nights and four days! And we have only air enough for two days in the reservoirs! "Without taking into account," said Ned, "that, even if we get out of this infernal prison, we shall also be imprisoned under the iceberg, shut out from all possible communication with the atmosphere." True enough! Who could then foresee the minimum of time necessary for our deliverance? We might be suffocated before the *Nautilus*

could regain the surface of the waves! Was it destined to perish in this ice-tomb, with all those it inclosed? The situation was terrible. But everyone had looked the danger in the face, and each was determined to do his duty to the last.

As I expected, during the night a new block a yard square was carried away, and still further sank the immense hollow. But in the morning when, dressed in my cork-jacket, I traversed the slushy mass at a temperature of six or seven degrees below zero, I remarked that the side walls were gradually closing in. The beds of water furthest from the trench, that were not warmed by the men's mere work, showed a tendency to solidification. In presence of this new and imminent danger, what would become of our chances of safety, and how hinder the solidification of this liquid medium, that would burst the partitions of the *Nautilus* like glass?

I did not tell my companions of this new danger. What was the good of damping the energy they displayed in the painful work of escape? But when I went on board again, I told Captain Nemo of this grave complication.

"I know it," he said, in that calm tone which could counteract the most terrible apprehensions. "It is one danger more; but I see no way of escaping it; the only chance of safety is to go quicker than solidification. We must be beforehand with it, that is all."

On this day for several hours I used my pickaxe vigorously. The work kept me up. Besides, to work was to quit the *Nautilus,* and breathe directly the pure air drawn from the reservoirs, and supplied by our apparatus, and to quit the impoverished and vitiated atmosphere. Toward evening the trench was dug one yard deeper. When I returned on board, I was nearly suffocated by the carbonic acid with which the air was filled—ah! if we had only the chemical means to drive away this deleterious gas! We had plenty of oxygen; all this water contained a considerable quantity, and by dissolving it with our powerful piles, it would restore the vivifying fluid. I had thought well over it; but of what good was that, since the carbonic acid produced by our respiration had invaded every part of the vessel? To absorb it, it was necessary to fill some jars with caustic potash, and to shake them incessantly. Now this substance was wanting on board, and nothing could replace it. On that evening, Captain Nemo ought to open the taps of his reservoirs, and let some pure air into the interior of the *Nautilus;* without this precaution, we could not get rid of the sense of suffocation. The next day, March 26th, I resumed my miner's work in beginning the fifth yard. The side walls and the lower surface of the iceberg thickened visibly. It was evident that they would meet before the *Nautilus* was able to disengage itself. Despair seized me for an instant, my pickaxe nearly fell from my hands. What was the good of digging if I must be suffocated, crushed by the water that was turning into stone—a punishment that the ferocity of the savages even would not have invented! Just then Captain Nemo passed near me. I touched his hand and showed him the walls of our prison. The wall to port had advanced to at least four yards from the hull of the *Nautilus.* The captain understood me, and signed to me to follow him. We went on board. I took off my cork-jacket, and accompanied him into

the drawing-room.

“M. Aronnax, we must attempt some desperate means, or we shall be sealed up in this solidified water as in cement.”

“Yes; but what is to be done?”

“Ah! if my *Nautilus* were strong enough to bear this pressure without being crushed!”

“Well?” I asked, not catching the captain’s idea.

“Do you not understand,” he replied, “that this congelation of water will help us? Do you not see that, by its solidification, it would burst through this field of ice that imprisons us, as, when it freezes, it bursts the hardest stones? Do you not perceive that it would be an agent of safety instead of destruction?”

“Yes, captain, perhaps. But whatever resistance to crushing the *Nautilus* possesses, it could not support this terrible pressure, and would be flattened like an iron plate.”

“I know it, sir. Therefore we must not reckon on the aid of nature, but on our own exertions. We must stop this solidification. Not only will the side walls be pressed together; but there is not ten feet of water before or behind the *Nautilus.* The congelation gains on us on all sides.”

“How long will the air in the reservoirs last for us to breathe on board?”

The captain looked in my face. “After to-morrow they will be empty!”

A cold sweat came over me. However, ought I to have been astonished at the answer? On March 22, the *Nautilus* was in the open polar seas. We were at 26°. For five days we had lived on the reserve on board. And what was left of the respirable air must be kept for the workers. Even now, as I write, my recollection is still so vivid that an involuntary terror seizes me, and my lungs seem to be without air. Meanwhile Captain Nemo reflected silently, and evidently an idea had struck him; but he seemed to reject it. At last, these words escaped his lips:

“Boiling water!” he muttered.

“Boiling water?” I cried.

“Yes, sir. We are inclosed in a space that is relatively confined. Would not jets of boiling water, constantly injected by the pumps, raise the temperature in this part, and stay the congelation?”

“Let us try it,” I said resolutely.

“Let us try, professor.”

The thermometer then stood at seven degrees outside. Captain Nemo took

me to the galleys, where the vast distillatory machines stood that furnished the drinkable water by evaporation. They filled these with water, and all the electric heat from the piles was thrown through the worms bathed in the liquid. In a few minutes this water reached a hundred degrees. It was directed toward the pumps, while fresh water replaced it in proportion. The heat developed by the troughs was such that cold water, drawn up from the sea, after only having gone through the machines, came boiling into the body of the pump. The injection was begun, and three hours after the thermometer marked six degrees below zero outside. One degree was gained. Two hours later, the thermometer only marked four degrees.

"We shall succeed," I said to the captain, after having anxiously watched the result of the operation.

"I think," he answered, "that we shall not be crushed. We have no more suffocation to fear."

During the night the temperature of the water rose to one degree below zero. The injections could not carry it to a higher point. But as the congelation of the sea-water produces at least two degrees, I was at last reassured against the dangers of solidification.

The next day, March 27, six yards of ice had been cleared, four yards only remaining to be cleared away. There was yet forty-eight hours' work, The air could not be renewed in the interior of the *Nautilus.* And this day would make it worse. An intolerable weight oppressed me. Toward three o'clock in the evening, this feeling rose to a violent degree. Yawns dislocated my jaws. My lungs panted as they inhaled this burning fluid, which became rarefied more and more. A moral torpor took hold of me. I was powerless, almost unconscious. My brave Conseil, though exhibiting the same symptoms and suffering in the same manner, never left me. He took my hand and encouraged me, and I heard him murmur, "Oh, if I could only not breathe, so as to leave more air for my master!"

Tears came into my eyes on hearing him speak thus. If our situation to all was intolerable in the interior, with what haste and gladness would we put on our cork-jackets to work in our turn! Pickaxes sounded on the frozen ice-beds. Our arms ached, the skin was torn off our hands. But what were these fatigues, what did the wounds matter? Vital air came to the lungs! We breathed! We breathed!

All this time no one prolonged his voluntary task beyond the prescribed time. His task accomplished, each one handed in turn to his panting companions the apparatus that supplied him with life. Captain Nemo set the example, and submitted first to this severe discipline. When the time came he gave up his apparatus to another, and returned to the vitiated air on board, calm, unflinching, unmurmuring.

On that day the ordinary work was accomplished with unusual vigor. Only two yards remained to be raised from the surface. Two yards only separated us

from the open sea. But the reservoirs were nearly emptied of air. The little that remained ought to be kept for the workers; not a particle for the *Nautilus*. When I went back on board, I was half-suffocated. What a night! I know not how to describe it. The next day my breathing was oppressed. Dizziness accompanied the pain in my head, and made me like a drunken man. My companions showed the same symptoms. Some of the crew had rattling in the throat.

On that day, the sixth of our imprisonment, Captain Nemo, finding the pickaxes work too slowly, resolved to crush the ice-bed that still separated us from the liquid sheet. This man's coolness and energy never forsook him. He subdued his physical pains by moral force.

By his orders the vessel was lightened, that is to say, raised from the ice-bed by a change of specific gravity. When it floated they towed it so as to bring it above the immense trench made on the level of the water-line. Then filling his reservoirs of water, he descended and shut himself up in the hole.

Just then all the crew came on board, and the double door of communication was shut. The *Nautilus* then rested on the bed of ice, which was not one yard thick, and which the sounding leads had perforated in a thousand places. The taps of the reservoirs were then opened, and a hundred cubic yards of water was let in, increasing the weight of the *Nautilus* to 1,800 tons. We waited, we listened, forgetting our sufferings in hope. Our safety depended on this last chance. Notwithstanding the buzzing in my head, I soon heard the humming sound under the hull of the *Nautilus*. The ice cracked with a singular noise, like tearing paper, and the *Nautilus* sank.

"We are off!" murmured Conseil in my ear.

I could not answer him. I seized his hand, and pressed it convulsively. All at once, carried away by its frightful overcharge, the *Nautilus* sank like a bullet under the waters, that is to say, it fell as if it was in a vacuum. Then all the electric force was put on the pumps, that soon began to let the water out of the reservoirs. After some minutes, our fall was stopped. Soon, too, the manometer indicated an ascending movement. The screw, going at full speed, made the iron hull tremble to its very bolts, and drew us toward the north. But if this floating under the iceberg is to last another day before we reach the open sea, I shall be dead first.

Half stretched upon a divan in the library, I was suffocating. My face was purple, my lips blue, my faculties suspended. I neither saw nor heard. All notion of time had gone from my mind. My muscles could not contract. I do not know how many hours passed thus, but I was conscious of the agony that was coming over me. I felt as if I was going to die. Suddenly I came to. Some breaths of air penetrated my lungs. Had we risen to the surface of the waves? Were we free of the iceberg? No; Ned and Conseil, my two brave friends, were sacrificing themselves to save me. Some particles of air still remained at the bottom of one apparatus. Instead of using it, they had kept it for me, and while they were being suffocated, they gave me life drop by drop. I wanted to

push back the thing; they held my hands, and for some moments I breathed freely. I looked at the clock; it was eleven in the morning. It ought to be the 28th of March. The *Nautilus* went at a frightful pace, forty miles an hour. It literally tore through the water. Where was Captain Nemo? Had he succumbed? Were his companions dead with him? At the moment, the manometer indicated that we were not more than twenty feet from the surface. A mere plate of ice separated us from the atmosphere; could we not break it? Perhaps. In any case the *Nautilus* was going to attempt it. I felt that it was in an oblique position, lowering the stern, and raising the bows. The introduction of water had been the means of disturbing its equilibrium. Then, impelled by its powerful screw, it attacked the ice-field from beneath like a formidable battering-ram. It broke it by backing and then rushing forward against the field, which gradually gave way; and at last, dashing suddenly against it, shot forward on the icy field, that crushed beneath its weight. The panel was opened—one might say torn off—and the pure air came in in abundance to all parts of the *Nautilus*.

Chapter XVII

From Cape Horn to the Amazon

HOW I GOT ON to the platform, I have no idea; perhaps the Canadian had carried me there. But I breathed, I inhaled the vivifying sea-air. My two companions were getting drunk with the fresh particles. The other unhappy men had been so long without food that they could not with impunity indulge in the simplest aliments that were given them. We, on the contrary, had no need to restrain ourselves; we could draw this air freely into our lungs, and it was the breeze, the breeze alone, that filled us with this keen enjoyment.

"Ah!" said Conseil. "How delightful this oxygen is! Master need not fear to breathe it. There is enough for everybody."

Ned Land did not speak, but he opened his jaws wide enough to frighten a shark. Our strength soon returned, and when I looked round me, I saw we were alone on the platform. The foreign seamen in the Nautilus were contented with the air that circulated in the interior; none of them had come to drink in the open air.

The first words I spoke were words of gratitude and thankfulness to my two companions. Ned and Conseil had prolonged my life during the last hours of this long agony. All my gratitude could not repay such devotion.

"My friends," said I, "we are bound one to the other forever, and I am under infinite obligations to you."

"Which I shall take advantage of," exclaimed the Canadian.

"What do you mean?" said Conseil.

"I mean that I shall take you with me when I leave this infernal *Nautilus."*

"Well," said Conseil, "after all this, are we going right?"

"Yes," I replied, "for we are going the way of the sun, and here the sun is in the north."

"No doubt," said Ned Land; "but it remains to be seen whether he will bring the ship into the Pacific or the Atlantic Ocean, that is, into frequented or deserted seas."

I could not answer that question, and I feared that Captain Nemo would

rather take us to the vast ocean that touches the coasts of Asia and America at the same time. He would thus complete the tour round the submarine world, and return to those waters in which the *Nautilus* could sail freely. We ought, before long, to settle this important point. The *Nautilus* went at a rapid pace. The polar circle was soon passed, and the course shaped for Cape Horn. We were off the American point, March 31, at seven o'clock in the evening. Then all our past sufferings were forgotten. The remembrance of that imprisonment in the ice was effaced from our minds. We only thought of the future. Captain Nemo did not appear again either in the drawing-room or on the platform. The point shown each day on the planisphere, and marked by the lieutenant, showed me the exact direction of the *Nautilus.* Now, on that evening, it was evident, to my great satisfaction, that we were going back to the north by the Atlantic. The next day, April 1, when the *Nautilus* ascended to the surface, some minutes before noon, we sighted land to the west. It was Terra del Fuego, which the first navigators named thus from seeing the quantity of smoke that rose from the natives' huts. The coast seemed low to me, but in the distance rose high mountains. I even thought I had a glimpse of Mount Sarmiento, that rises 2,070 yards above the level of the sea, with a very pointed summit, which, according as it is misty or clear, is a sign of fine or of wet weather. At this moment, the peak was clearly defined against the sky. The *Nautilus,* diving again under the water, approached the coast, which was only some few miles off. From the glass windows in the drawing-room, I saw long seaweeds, and gigantic fuci, and varech, of which the open polar sea contains so many specimens, with their sharp polished filaments; they measured about 300 yards in length—real cables, thicker than one's thumb; and having great tenacity, they are often used as ropes for vessels. Another weed known as velp, with leaves four feet long, buried in the coral concretions, hung at the bottom. It served as nest and food for myriads of crustacea and mollusks, crabs and cuttlefish. There seals and otters had splendid repasts, eating the flesh of fish with sea-vegetables, according to the English fashion. Over this fertile and luxuriant ground the *Nautilus* passed with great rapidity. Toward evening it approached the Falkland group, the rough summits of which I recognized the following day. The depth of the sea was moderate. On the shores, our nets brought in beautiful specimens of seaweed, and particularly a certain fucus, the roots of which were filled with the best mussels in the world. Geese and ducks fell by dozens on the platform, and soon took their places in the pantry on board. With regard to fish, I observed especially specimens of the goby species, some two feet long, all over white and yellow spots. I admired also numerous medusæ, and the finest of the sort, the crysaora, peculiar to the sea about the Falkland Isles. I should have liked to preserve some specimens of these delicate zoöphytes; but they are only like clouds, shadows, apparitions, that sink and evaporate, when out of their native element.

When the last heights of the Falklands had disappeared from the horizon, the *Nautilus* sank to between twenty and twenty-five yards, and followed the American coast. Captain Nemo did not show himself. Until the 3d of April we did not quit the shores of Patagonia, sometimes under the ocean, sometimes at the surface. The *Nautilus* passed beyond the large estuary formed by the mouth

of the Plata, and was, on the 4th of April, fifty-six miles off Uruguay. Its direction was northward, and followed the long windings of the coast of South America. We had then made 16,000 miles since our embarkation in the seas of Japan. About eleven o'clock in the morning the Tropic of Capricorn was crossed on the thirty-seventh meridian, and we passed Cape Frio standing out to sea. Captain Nemo, to Ned Land's great displeasure, did not like the neighborhood of the inhabited coasts of Brazil, for we went at a giddy speed. Not a fish, not a bird of the swiftest kind could follow us, and the natural curiosities of these seas escaped all observation.

This speed was kept up for several days, and in the evening of the 9th of April we sighted the most easterly point of South America that forms Cape San Roque. But then the *Nautilus* swerved again, and sought the lowest depth of a submarine valley, which is between this cape and Sierra Leone on the African coast. This valley bifurcates to the parallel of the Antilles, and terminates at the north by the enormous depression of 9,000 yards. In this place, the geological basin of the ocean forms, as far as the Lesser Antilles, a cliff of three and a half miles perpendicular in height, and at the parallel of the Cape Verde Islands, another wall not less considerable, that incloses thus all the sunk continent of the Atlantic. The bottom of this immense valley is dotted with some mountains, that give to these submarine places a picturesque aspect. I speak, moreover, from the manuscript charts that were in the library of the *Nautilus-charts* evidently due to Captain Nemo's hand, and made after his personal observations. For two days the desert and deep waters were visited by means of the inclined planes. The *Nautilus* was furnished with long diagonal broadsides, which carried it to all elevations. But, on the 11th of April, it rose suddenly, and land appeared at the mouth of the Amazon River, a vast estuary, the embouchure of which is so considerable that it freshens the sea-water for the distance of several leagues.

The equator was crossed. Twenty miles to the west were the Guianas, a French territory, on which we could have found an easy refuge; but a stiff breeze was blowing, and the furious waves would not have allowed a single boat to face them. Ned Land understood that, no doubt, for he spoke not a word about it. For my part, I made no allusion to his schemes of flight, for I would not urge him to make an attempt that must inevitably fail. I made the time pass pleasantly by interesting studies. During the days of April 11 th and 12th the *Nautilus* did not leave the surface of the sea, and the net brought in a marvelous haul of zoöphytes, fish, and reptiles. Some zoöphytes had been fished up by the chain of the nets; they were for the most part beautiful phyctallines, belonging to the actinidian family, and among other species the phyctalis protexta, peculiar to that part of the ocean, with a little cylindrical trunk, ornamented with vertical lines, speckled with red dots, crowning a marvelous blossoming of tentacles. As to the mollusks, they consisted of some I had already observed—turritellas, olive porphyras, with regular lines intercrossed, with red spots standing out plainly against the flesh; odd peteroceras, like petrified scorpions; translucid hyaleas, argonauts, cuttle-fish (excellent eating), and certain species of calmars that naturalists of antiquity have classed among the flying-fish, and that serve principally for bait for cod

fishing. I had not an opportunity of studying several species of fish on these shores. Among the cartilaginous ones, petromyzons-pricka, a sort of eel, fifteen inches long, with a greenish head, violet fins, gray-blue back, brown belly, silvered and sown with bright spots, the pupil of the eye encircled with gold—a curious animal that the current of the Amazon had drawn to the sea, for they inhabit fresh waters—tuberculated streaks, with pointed snouts, and a long loose tail, armed with a long jagged sting; little sharks, a yard long, gray and whitish skin, and several rows of teeth, bent back, that are generally known by the name of pantouffles; vespertilios, a kind of red isosceles triangle, half a yard long, to which pectorals are attached by fleshy prolongations that make them look like bats, but that their horny appendage, situated near the nostrils, has given them the name of sea-unicorns; lastly, some species of balistæ, the curassavian, whose spots were of a brilliant gold color, and the capriscus of clear violet, and with varying shades like a pigeon's throat.

I end here this catalogue, which is somewhat dry, perhaps, but very exact, with a series of bony fish that I observed in passing, belonging to the apteronotes, and whose snout is white as snow, the body of a beautiful black, marked with a very long loose fleshy strip; odontognathes, armed with spikes; sardines, nine inches long, glittering with a bright silver light; a species of mackerel provided with two anal fins; centronotes of a blackish tint, that are fished for with torches, long fish, two yards in length, with fat flesh, white and firm, which, when they are fresh, taste like eel, and when dry, like smoked salmon; labres, half red, covered with scales only at the bottom of the dorsal and anal fins; chrysoptera, on which gold and silver blend their brightness with that of the ruby and topaz; golden-tailed spares, the flesh of which is extremely delicate, and whose phosphorescent properties betray them in the midst of the waters; orange-colored spares with a long tongue; maigres, with gold caudal fins, dark thorn-tails, anableps of Surinam, etc.

Notwithstanding this "et cetera," I must not omit to mention fish that Conseil will long remember, and with good reason. One of our nets had hauled up a sort of very flat ray-fish, which, with the tail cut off, formed a perfect disk, and weighed twenty ounces. It was white underneath, red above, with large round spots of dark blue encircled with black, very glossy skin, terminating in a bilobed fin. Laid out on the platform, it struggled, tried to turn itself by convulsive movements, and made so many efforts that one last turn had nearly sent it into the sea. But Conseil, not wishing to let the fish go, rushed to it, and, before I could prevent him, had seized it with both hands. In a moment he was overthrown, his legs in the air, and half his body paralyzed, crying:

"Oh, master, master! Come to me!"

It was the first time the poor boy had not spoken to me in the third person. The Canadian and I took him up, and rubbed his contracted arms till he became sensible. The unfortunate Conseil had attacked a crampfish of the most dangerous kind, the cumana. This odd animal, in a medium conductor like water, strikes fish at several yards' distance, so great is the power of its

electric organ, the two principal surfaces of which do not measure less than twenty-seven square feet. The next day, April 12, the *Nautilus* approached the Dutch coast, near the mouth of the Maroni. There several groups of sea-cows herded together; they were manatees, that, like the dugong and the stellera, belong to the sirenian order. These beautiful animals, peaceable and inoffensive, from eighteen to twenty-one feet in length, weigh at least sixteen hundredweight. I told Ned Land and Conseil that provident nature had assigned an important *rôle* to these mammalia. Indeed, they, like the seals, are designed to graze on the submarine prairies, and thus destroy the accumulation of weed that obstructs the tropical rivers.

"And do you know," I added, "what has been the result since men have almost entirely annihilated this useful race? That the putrified weeds have poisoned the air, and the poisoned air causes the yellow fever,[cb] that desolates these beautiful countries. Enormous vegetations are multiplied under the torrid seas, and the evil is irresistibly developed from the mouth of the Rio de la Plata to Florida. If we are to believe Toussenel, this plague is nothing to what it would be if the seas were cleared of whales and seals. Then, infested with poulps, medusæ, and cuttle-fish, they would become immense centers of infection, since their waves would not possess 'these vast stomachs that God had charged to infest the surface of the seas.' "

However, without disputing these theories, the crew of the *Nautilus* took possession of half a dozen manatees. They provisioned the larders with excellent flesh, superior to beef and veal. This sport was not interesting. The manatees allowed themselves to be hit without defending themselves. Several thousand pounds of meat were stored up on board to be dried, On this day, a successful haul of fish increased the stores of the *Nautilus,* so full of game were these seas. They were echeneides belonging to the third family of the malacopterygiens ; their flattened disks were composed of transverse movable cartilaginous plates, by which the animal was enabled to create a vacuum, and so to adhere to any object like a cupping-glass. The remora that I had observed in the Mediterranean belongs to this species. But the one of which we are speaking was the echeneis osteochera, peculiar to this sea.

The fishing over, the *Nautilus* neared the coast. About here a number of sea-turtles were sleeping on the surface of the water. It would have been difficult to capture these precious reptiles, for the least noise awakens them, and their solid skull is proof against the harpoon. But the echeneis effects their capture with extraordinary precision and certainty. This animal is, indeed, a living fishhook, which would make the fortune of an inexperienced fisherman. The crew of the *Nautilus* tied a ring to the tail of these fish, so large as not to encumber their movements, and to this ring a long cord, lashed to the ship's side by the other end. The echeneids, thrown into the sea, directly began their game, and fixed themselves to the breastplate of the turtles. Their tenacity was such that they were torn rather than let go their hold. The men hauled them on board, and with them the turtles to which they adhered. They took also several cacouannes a yard long, which weighed 400 lbs. Their carapace covered with large horny plates, thin, transparent, brown, with white and

yellow spots, fetch a good price in the market. Besides, they were excellent in an edible point of view, as well as the fresh turtles, which have an exquisite flavor. This day's fishing brought to a close our stay on the shores of the Amazon, and by nightfall the *Nautilus* had regained the high seas.

Chapter XVIII

The Poulps[cc]

FOR SEVERAL DAYS THE *Nautilus* kept off from the American coast. Evidently it did not wish to risk the tides of the Gulf of Mexico, or of the sea of the Antilles. April 16th, we sighted Martinique and Guadaloupe from a distance of about thirty miles. I saw their tall peaks for an instant. The Canadian, who counted on carrying out his projects in the Gulf, by either landing, or hailing one of the numerous boats that coast from one island to another, was quite disheartened. Flight would have been quite practicable, if Ned Land had been able to take possession of the boat without the captain's knowledge. But in the open sea it could not be thought of. The Canadian, Conseil, and I had a long conversation on this subject. For six months we had been prisoners on board the *Nautilus.* We had traveled 17,000 leagues; and, as Ned Land said, there was no reason why it should not come to an end. We could hope nothing from the captain of the *Nautilus,* but only from ourselves. Besides, for some time past he had become graver, more retired, less sociable. He seemed to shun me. I met him rarely. Formerly, he was pleased to explain the submarine marvels to me; now, he left me to my studies, and came no more to the saloon. What change had come over him? For what cause? For my part, I did not wish to bury with me my curious and novel studies. I had now the power to write the true book of the sea; and this book, sooner or later, I wished to see daylight. Then again, in the water by the Antilles, ten yards below the surface of the waters, by the open panels, what interesting products I had to enter on my daily notes! There were, among other zoöphytes, those known under the name of physalis pelagica, a sort of large oblong bladder with mother-of-pearl rays, holding out their membranes to the wind, and letting their blue tentacles float like threads of silk; charming medusæ to the eye, real nettles to the touch, that distill a corrosive fluid. There were also annelides, a yard and a half long, furnished with a pink horn, and with 1,700 locomotive organs that wind through the waters, and throw out in passing all the light of the solar spectrum. There were, in the fish category, some Malabar rays, enormous gristly things, ten feet long, weighing 600 pounds, the pectoral fin triangular in the midst of a slightly humped back, the eyes fixed in the extremities of the face, beyond the head, and which floated like weft, and looked sometimes like an opaque shutter on our glass window. There were American balistæ, which nature has only dressed in black and white; gobies, with yellow fins and prominent jaw; mackerel sixteen feet long, with short pointed teeth, covered with small scales, belonging to the albicore species. Then, in swarms, appeared gray mullet, covered with stripes of gold from the head to the tail,

beating their resplendent fins, like masterpieces of jewelry, consecrated formerly to Diana, particularly sought after by rich Romans, and of which the proverb says, “Whoever takes them does not eat them.” Lastly, pomacanthe dorees, ornamented with emerald bands, dressed in velvet and silk, passed before our eyes like Veronese lords; spurred spari passed with their pectoral fins; clupanodons, fifteen inches long, enveloped in their phosphorescent light; mullet beat the sea with their large jagged tails; red vendaces seemed to mow the waves with their showy pectoral fins; and silvery selenes, worthy of their name, rose on the horizon of the waters like so many moons with whitish rays. April 20th, we had risen to a mean height of 1,500 yards. The land nearest us then was the archipelago of the Bahamas. There rose high submarine cliffs covered with large weeds, giant laminariæ and fuci, a perfect espalier of hydrophytes worthy of a Titan world. It was about eleven o’clock when Ned Land drew my attention to a formidable pricking, like the sting of an ant, which was produced by means of large seaweeds.

“Well,” I said, “these are proper caverns for poulps, and I should not be astonished to see some of these monsters.”

“What!” said Conseil. “Cuttle-fish, real cuttle-fish, of the cephalopod class?”

“No,” I said; “poulps of huge dimensions.”

“I will never believe that such animals exist,” said Ned.

“Well,” said Conseil, with the most serious air in the world, “I remember perfectly to have seen a large vessel drawn under the waves by a cephalopod’s arm.”

“You saw that?” said the Canadian.

“Yes, Ned.”

“With your own eyes?”

“With my own eyes.”

“Where, pray, might that be?”

“At St. Malo,” answered Conseil.

“In the port?” said Ned ironically.

“No; in a church,” replied Conseil.

“In a church!” cried the Canadian.

“Yes; friend Ned. In a picture representing the poulp in question.”

“Good!” said Ned Land, bursting out laughing.

“He is quite right,” I said. “I have heard of this picture; but the subject represented is taken from a legend, and you know what to think of legends in

the matter of natural history. Besides, when it is a question of monsters, the imagination is apt to run wild. Not only is it supposed that these poulps can draw down vessels, but a certain Olaüs Magnus speaks of a cephalopod a mile long, that is more like an island than an animal. It is also said that the Bishop of Nidros was building an altar on an immense rock. Mass finished, the rock began to walk, and returned to the sea. The rock was a poulp. Another bishop, Pontoppidan, speaks also of a poulp on which a regiment of cavalry could maneuver. Lastly, the ancient naturalists speak of monsters whose mouths were like gulfs, and which were too large to pass through the Straits of Gibraltar."

"But how much is true of these stories?" asked Conseil.

"Nothing, my friends; at least of that which passes the limit of truth to get to fable or legend. Nevertheless, there must be some ground for the imagination of the story-tellers. One cannot deny that poulps and cuttle-fish exist of a large species, inferior, however, to the cetaceans. Aristotle has stated the dimensions of a cuttle-fish as five cubits, or nine feet two inches. Our fishermen frequently see some that are more than four feet long. Some skeletons of poulps are preserved in the museums of Trieste and Montpellier, that measure two yards in length. Besides, according to the calculations of some naturalists, one of these animals, only six feet long, would have tentacles twenty-seven feet long. That would suffice to make a formidable monster."

"Do they fish for them in these days?" asked Ned.

"If they do not fish for them, sailors see them at least. One of my friends, Captain Paul Bos of Havre, has often affirmed that he met one of these monsters, of colossal dimensions, in the Indian seas. But the most astonishing fact, and which does not permit of the denial of the existence of these gigantic animals, happened some years ago, in 1861."

"What is the fact?" asked Ned Land.

"This is it. In 1861, to the northeast of Teneriffe, very nearly in the same latitude we are in now, the crew of the dispatch-boat Alector perceived a monstrous cuttle-fish swimming in the waters. Captain Bouguer went near to the animal, and attacked it with harpoons and guns, without much success, for balls and harpoons glided over the soft flesh. After several fruitless attempts, the crew tried to pass a slip-knot round the body of the mollusk. The noose slipped as far as the caudal fins, and there stopped. They tried then to haul it on board, but its weight was so considerable that the tightness of the cord separated the tail from the body, and, deprived of this ornament, he disappeared under the water."

"Indeed! Is that a fact?"

"An indisputable fact, my good Ned. They proposed to name this poulp 'Bouguer's cuttle-fish.'"

"What length was it?" asked the Canadian.

“Did it not measure about six yards?” said Conseil, who, posted at the window, was examining again the irregular windings of the cliff.

“Precisely,” I replied.

“Its head,” rejoined Conseil, “was it not crowned with eight tentacles, that beat the water like a nest of serpents?”

“Precisely.”

“Had not its eyes, placed at the back of its head, considerable development?”

“Yes, Conseil.”

“And was not its mouth like a parrot’s beak?”

“Exactly, Conseil.”

“Very well! No offense to master,” he replied quietly; “if this is not Bouguer’s cuttle-fish, it is, at least, one of its brothers.”

I looked at Conseil. Ned Land hurried to the window.

“What a horrible beast!” he cried.

I looked in my turn, and could not repress a gesture of disgust. Before my eyes was a horrible monster, worthy to figure in the legends of the marvelous. It was an immense cuttle-fish, being eight yards long. It swam crossways in the direction of the Nautilus with great speed, watching us with its enormous staring green eyes. Its eight arms, or rather feet, fixed to its head, that have given the name of cephalopod to these animals, were twice as long as its body, and were twisted like the Furies’ hair. One could see the 250 air-holes on the inner side of the tentacles. The monster’s mouth, a horned beak like a parrot’s, opened and shut vertically. Its tongue, a horned substance, furnished with several rows of pointed teeth, came out quivering from this veritable pair of shears. What a freak of nature—a bird’s beak on a mollusk! Its spindle-like body formed a fleshy mass that might weigh 4,000 to 5,000 lbs.; the varying color changing with great rapidity, according to the irritation of the animal, passed successively from livid gray to reddish-brown. What irritated this mollusk? No doubt the presence of the *Nautilus,* more formidable than itself, and on which its suckers or its jaws had no hold. Yet, what monsters these poulps are! What vitality the Creator has given them! What vigor in their movements! And they possess three hearts! Chance had brought us in presence of this cuttle-fish, and I did not wish to lose the opportunity of carefully studying this specimen of cephalopods. I overcame the horror that inspired me; and, taking a pencil, began to draw it.

“Perhaps this is the same which the Alector saw,” said Conseil.

“No,” replied the Canadian; “for this is whole, and the other had lost its tail.”

“That is no reason,” I replied. “The arms and tails of these animals are reformed by redintegration; and, in seven years, the tail of Bouguer’s cuttle-fish has no doubt had time to grow.”

By this time other poulps appeared at the port light. I counted seven. They formed a procession after the *Nautilus,* and I heard their beaks gnashing against the iron hull. I continued my work. These monsters kept in the water with such precision that they seemed immovable. Suddenly the *Nautilus* stopped. A shock made it tremble in every plate.

“Have we struck anything?” I asked.

“In any case,” replied the Canadian, “we shall be free, for we are floating.”

The *Nautilus* was floating, no doubt, but it did not move. A minute passed. Captain Nemo, followed by his lieutenant, entered the drawing-room. I had not seen him for some time. He seemed dull. Without noticing or speaking to us, he went to the panel, looked at the poulps, and said something to his lieutenant. The latter went out. Soon the panels were shut. The ceiling was lighted. I went toward the captain.

“A curious collection of poulps?” I said.

“Yes, indeed, Mr. Naturalist,” he replied; “and we are going to fight them, man to beast.”

I looked at him. I thought I had not heard aright.

“Man to beast?” I repeated.

“Yes, sir. The screw is stopped. I think that the horny jaw of one of the cuttle-fish is entangled in the blades. That is what prevents our moving.”

“What are you going to do?”

“Rise to the surface, and slaughter this vermin.”

“A difficult enterprise.”

“Yes, indeed. The electric bullets are powerless against the soft flesh, where they do not find resistance enough to go off. But we shall attack them with the hatchet.”

“And the harpoon, sir,” said the Canadian, “if you do not refuse my help.”

“I will accept it, Master Land.”

“We will follow you,” I said; and following Captain Nemo, we went toward the central staircase.

There, about ten men with boarding hatchets were ready for the attack. Conseil and I took two hatchets; Ned Land seized a harpoon. The Nautilus had then risen to the surface. One of the sailors, posted on the top ladderstep, unscrewed the bolts of the panels. But hardly were the screws loosed, when

the panel rose with great violence, evidently drawn by the suckers of a poulp's arm. Immediately one of these arms slid like a serpent down the opening, and twenty others were above. With one blow of the axe, Captain Nemo cut this formidable tentacle, that slid wriggling down the ladder. Just as were pressing one on the other to reach the platform, two other arms, lashing the air, came down on the seaman placed before Captain Nemo and lifted him up with irresistible power. Captain Nemo uttered a cry, and rushed out. We hurried after him.

What a scene! The unhappy man, seized by the tentacle, and fixed to the suckers, was balanced in the air at the caprice of this enormous trunk. He rattled in his throat, he was stifled, he cried, "Help! Help!" These words, *spoken in French,* startled me! I had a fellow-countryman on board, perhaps several! That heartrending cry! I shall hear it all my life. The unfortunate man was lost. Who could rescue him from that powerful pressure? However, Captain Nemo had rushed to the poulp, and with one blow of the axe had cut through one arm. His lieutenant struggled furiously against other monsters that crept on the flanks of the *Nautilus.* The crew fought with their axes. The Canadian, Conseil, and I buried our weapons in the fleshy masses; a strong smell of musk penetrated the atmosphere. It was horrible!

For one instant, I thought the unhappy man entangled with the poulp would be torn from its powerful suction. Seven of the eight arms had been cut off. One only wriggled in the air, brandishing the victim like a feather. But just as Captain Nemo and his lieutenant threw themselves on it, the animal ejected a stream of black liquid. We were blinded with it. When the cloud dispersed, the cuttle-fish had disappeared, and my unfortunate countryman with it. Ten or twelve poulps now invaded the platform and sides of the Nautilus. We rolled pell-mell into the midst of this nest of serpents, that wriggled on the platform in the waves of blood and ink. It seemed as though these slimy tentacles sprang up like the hydra's heads. Ned Land's harpoon, at each stroke, was plunged into the staring eyes of the cuttle-fish. But my bold companion was suddenly overturned by the tentacles of a monster he had not been able to avoid.

Ah! how my heart beat with emotion and horror! The formidable beak of a cuttle-fish was open over Ned Land. The unhappy man would be cut in two. I rushed to his succor. But Captain Nemo was before me; his axe disappeared between the two enormous jaws, and, miraculously saved, the Canadian, rising, plunged his harpoon deep into the triple heart of the poulp.

"I owed myself this revenge!" said the captain to the Canadian.

Ned bowed without replying. The combat had lasted a quarter of an hour. The monsters, vanquished and mutilated, left us at last, and disappeared under the waves. Captain Nemo, covered with blood, nearly exhausted, gazed upon the sea that had swallowed up one of his companions, and great tears gathered in his eyes.

Chapter XIX

The Gulf Stream

THIS TERRIBLE SCENE OF the 20th of April none of us can ever forget. I have written it under the influence of violent emotion. Since then I have revised the recital; I have read it to Conseil and to the Canadian. They found it exact as to facts, but insufficient as to effect. To paint such pictures, one must have the pen of the most illustrious of our poets, the author of "The Toilers of the Deep."[39]

I have said that Captain Nemo wept while watching the waves; his grief was great. It was the second companion he had lost since our arrival on board, and what a death! That friend, crushed, stifled, bruised by the dreadful arms of a poulp, pounded by his iron jaws, would not rest with his comrades in the peaceful coral cemetery! In the midst of the struggle, it was the despairing cry uttered by the unfortunate man that had torn my heart. The poor Frenchman, forgetting his conventional language, had taken to his own mother tongue, to utter a last appeal! Among the crew of the *Nautilus,* associated with the body and soul of the captain, recoiling like him from all contact with men, I had a fellow-countryman. Did he alone represent France in this mysterious association, evidently composed of individuals of divers nationalities? It was one of these insoluble problems that rose up unceasingly before my mind!

Captain Nemo entered his room, and I saw him no more for some time. But that he was sad and irresolute I could see by the vessel, of which he was the soul, and which received all his impressions. The *Nautilus* did not keep on in its settled course; it floated about like a corpse at the will of the waves. It went at random. He could not tear himself away from the scene of the last struggle, from this sea that had devoured one of his men. Ten days passed thus. It was not till the 1 st of May that the *Nautilus* resumed its northerly course, after having sighted the Bahamas at the mouth of the Bahama Canal. We were then following the current from the largest river to the sea, that has its banks, its fish, and its proper temperatures. I mean the Gulf Stream. It is really a river, that flows freely to the middle of the Atlantic, and whose waters do not mix with the ocean waters. It is a salt river, saltier than the surrounding sea. Its mean depth is 1,500 fathoms, its mean breadth ten miles. In certain places the current flows with the speed of two miles and a half an hour. The body of its waters is more considerable than that of all the rivers on the globe. It was on this ocean river that the *Nautilus* then sailed.

This current carried with it all kinds of living things. Argonauts, so

common in the Mediterranean, were there in quantities. Of the gristly sort, the most remarkable were the turbot, whose slender tails form nearly the third part of the body, and that looked like large lozenges twenty-five feet long; also, small sharks a yard long, with large heads, short rounded muzzles, pointed teeth in several rows, and whose bodies seemed covered with scales. Among the bony fish I noticed some gray gobies, peculiar to these waters; black giltheads, whose iris shone like fire; sirenes a yard long, with large snouts thickly set with little teeth, that uttered little cries; blue coryphænes, in gold and silver; parrots, like the rainbows of the ocean, that could rival in color the most beautiful tropical birds; blennies with triangular heads; bluish rhombs destitute of scales; batrachoides covered with yellow transversal bands like a Greek τ; heaps of little gobies spotted with yellow; dipterodons with silvery heads and yellow tails; several specimens of salmon, mugilomores slender in shape, shining with a soft light that Lacépède consecrated to the service of his wife; and lastly, a beautiful fish, the American-knight, that, decorated with all the orders and ribbons, frequents the shores of this great nation, that esteems orders and ribbons so little.

I must add that, during the night, the phosphorescent waters of the Gulf Stream rivaled the electric power of our watch-light, especially in the stormy weather that threatened us so frequently. May 8th, we were still crossing Cape Hatteras, at the height of North Carolina. The width of the Gulf Stream there is seventy-five miles, and its depth 210 yards. The *Nautilus* still went at random; all supervision seemed abandoned. I thought that, under these circumstances, escape would be possible. Indeed, the inhabited shores offered anywhere an easy refuge. The sea was incessantly plowed by the steamers that ply between New York or Boston and the Gulf of Mexico, and overrun day and night by the little schooners coasting about the several parts of the American coast. We could hope to be picked up. It was a favorable opportunity, notwithstanding the thirty miles that separated the *Nautilus* from the coasts of the Union. One unfortunate circumstance thwarted the Canadian's plans. The weather was very bad. We were nearing those shores where tempests are so frequent, that country of waterspouts and cyclones actually engendered by the current of the Gulf Stream. To tempt the sea in a frail boat was certain destruction! Ned Land owned this himself. He fretted, seized with nostalgia that flight only could cure.

"Master," he said that day to me, "this must come to an end. I must make a clean breast of it. This Nemo is leaving land and going up to the north. But I declare to you, I have had enough of the South Pole, and I will not follow him to the north."

"What is to be done, Ned, since flight is impracticable just now?"

"We must speak to the captain," said he; "you said nothing when we were in your native seas. I will speak, now we are in mine. When I think that before long the *Nautilus* will be by Nova Scotia, and that there near Newfoundland is a large bay, and into that bay the St. Lawrence empties itself, and that the St. Lawrence is my river, the river by Quebec, my native town—when I think of this I feel furious, it makes my hair stand on end. Sir, I would rather throw

myself into the sea! I will not stay here! I am stifled!"

The Canadian was evidently losing all patience. His vigorous nature could not stand this prolonged imprisonment. His face altered daily; his temper became more surly. I knew what he must suffer, for I was seized with nostalgia myself. Nearly seven months had passed without our having had any news from land; Captain Nemo's isolation, his altered spirits, especially since the fight with the poulps, his taciturnity, all made me view things in a different light.

"Well, sir?" said Ned, seeing I did not reply.

"Well, Ned! Do you wish me to ask Captain Nemo his intentions concerning us?"

"Yes, sir."

"Although he has already made them known?"

"Yes; I wish it settled finally. Speak for me, in my name only, if you like."

"But I so seldom meet him. He avoids me."

"That is all the more reason for you to go to see him."

I went to my room. From thence I meant to go to Captain Nemo's. It would not do to let this opportunity of meeting him slip. I knocked at the door. No answer. I knocked again, then turned the handle. The door opened, I went in. The captain was there. Bending over his work-table, he had not heard me. Resolved not to go without having spoken, I approached him. He raised his head quickly, frowned, and said roughly, "You here! What do you want?"

"To speak to you, captain."

"But I am busy, sir; I am working. I leave you at liberty to shut yourself up; can not I be allowed the same?"

This reception was not encouraging; but I was determined to hear and answer everything.

"Sir," I said coldly, "I have to speak to you on a matter that admits of no delay."

"What is that, sir?" he replied ironically. "Have you discovered something that has escaped me, or has the sea delivered up any new secrets?"

We were at cross-purposes. But before I could reply, he showed me an open manuscript on his table, and said, in a more serious tone, "Here, M. Aronnax, is a manuscript written in several languages. It contains the sum of my studies of the sea; and, if it please God, it shall not perish with me. This manuscript, signed with my name, completed with the history of my life, will be shut up in a little insubmersible case. The last survivor of all of us on board the *Nautilus* will throw this case into the sea, and it will go whither it is borne

by the waves."

This man's name! his history written by himself! His mystery would then be revealed some day.

"Captain," I said, "I can but approve of the idea that makes you act thus. The result of your studies must not be lost. But the means you employ seem to me to be primitive. Who knows where the winds will carry this case, and in whose hands it will fall? Could you not use some other means? Could not you, or one of yours—"

"Never, sir!" he said, hastily interrupting me.

"But I and my companions are ready to keep this manuscript in store; and, if you will put us at liberty—"

"At liberty?" said the captain, rising.

"Yes, sir; that is the subject on which I wish to question you. For seven months we have been here on board, and I ask you to-day, in the name of my companions, and in my own, if your intention is to keep us here always?"

"M. Aronnax, I will answer you to-day as I did seven months ago; whoever enters the *Nautilus* must never quit it."

"You impose actual slavery on us!"

"Give it what name you please."

"But everywhere the slave has the right to regain his liberty."

"Who denies you this right? Have I ever tried to chain you with an oath?"

He looked at me with his arms crossed.

"Sir," I said, "to return a second time to this subject will be neither to your nor to my taste; but as we have entered upon it, let us go through with it. I repeat, it is not only myself whom it concerns. Study is to me a relief, a diversion, a passion that could make me forget everything. Like you, I am willing to live obscure in the frail hope of bequeathing one day, to future time, the result of my labors. But it is otherwise with Ned Land. Every man, worthy of the name, deserves some consideration. Have you thought that love of liberty, hatred of slavery, can give rise to schemes of revenge in a nature like the Canadian's; that he could think, attempt, and try—"

I was silenced; Captain Nemo rose.

"Whatever Ned Land thinks of, attempts, or tries, what does it matter to me? I did not seek him! It is not for my pleasure that I keep him on board! As for you, M. Aronnax, you are one of those who can understand everything, even silence. I have nothing more to say to you. Let this first time you have come to treat of this subject be the last; for a second time I will not listen to you."

I retired. Our situation was critical. I related my conversation to my two companions.

"We know now," said Ned, "that we can expect nothing from this man. The *Nautilus* is nearing Long Island. We will escape, whatever the weather may be."

But the sky became more and more threatening. Symptoms of a hurricane became manifest. The atmosphere was becoming white and misty. On the horizon fine streaks of cirrhous clouds were succeeded by masses of cumuli. Other low clouds passed swiftly by. The swollen sea rose in huge billows. The birds disappeared, with the exception of the petrels, those friends of the storm. The barometer fell sensibly, and indicated an extreme tension of the vapors. The mixture of the storm-glass was decomposed under the influence of the electricity that pervaded the atmosphere. The tempest burst on the 18th of May, just as the *Nautilus* was floating off Long Island, some miles from the port of New York. I can describe this strife of the elements! For, instead of fleeing to the depths of the sea, Captain Nemo, by an unaccountable caprice, would brave it at the surface. The wind blew from the southwest at first. Captain Nemo, during the squalls, had taken his place on the platform. He had made himself fast, to prevent being washed overboard by the monstrous waves. I had hoisted myself up, and made myself fast also, dividing my admiration between the tempest and this extraordinary man who was coping with it. The raging sea was swept by huge cloud-drifts, which were actually saturated with the waves. The *Nautilus,* sometimes lying on its side, sometimes standing up like a mast, rolled and pitched terribly. About five o'clock a torrent of rain fell, that lulled neither sea nor wind. The hurricane blew nearly forty leagues an hour. It is under these conditions that it overturns houses, breaks iron gates, displaces twenty-four-pounders. However, the *Nautilus,* in the midst of the tempest, confirmed the words of a clever engineer: "There is no well-constructed hull that cannot defy the sea." This was not a resisting rock; it was a steel spindle, obedient and movable, without rigging or masts, that braved its fury with impunity. However, I watched these raging waves attentively. They measured fifteen feet in height, and 150 to 175 yards long, and their speed of propagation was thirty feet per second. Their bulk and power increased with the depth of the water. Such waves as these at the Hebrides have displaced a mass weighing 8,400 lbs. They are they which, in the tempest of December 23, 1864, after destroying the town of Yeddo, in Japan, broke the same day on the shores of America. [cd] The intensity of the tempest increased with the night. The barometer, as in 1860 at Reunion during a cyclone, fell seven-tenths at the close of day. I saw a large vessel pass the horizon struggling painfully. She was trying to lie to under half steam, to keep up above the waves. It was probably one of the steamers of the line from New York to Liverpool or Havre. It soon disappeared in the gloom. At ten o'clock in the evening the sky was on fire. The atmosphere was streaked with vivid lightning. I could not bear the brightness of it; while the captain, looking at it, seemed to envy the spirit of the tempest. A terrible noise filled the air, a complex noise, made up of the howls of the crushed waves, the roaring of the wind, and the claps of thunder. The wind veered suddenly to all points of the

horizon; and the cyclone, rising in the east, returned after passing by the north, west, and south, in the inverse course pursued by the circular storms of the southern hemisphere. Ah, that Gulf Stream! It deserves its name of the King of Tempests. It is that which causes those formidable cyclones, by the difference of temperature between its air and its currents. A shower of fire had succeeded the rain. The drops of water were changed to sharp spikes. One would have thought that Captain Nemo was courting a death worthy of himself, a death by lightning. As the *Nautilus,* pitching dreadfully, raised its steel spur in the air, it seemed to act as a conductor, and I saw long sparks burst from it. Crushed and without strength, I crawled to the panel, opened it, and descended to the saloon. The storm was then at its height. It was impossible to stand upright in the interior of the *Nautilus.* Captain Nemo came down about twelve. I heard the reservoirs filling by degrees, and the *Nautilus* sank slowly beneath the waves. Through the open windows in the saloon I saw large fish, terrified, passing like phantoms in the water. Some were struck before my eyes. The *Nautilus* was still descending. I thought that at about eight fathoms deep we should find a calm. But no! The upper beds were too violently agitated for that. We had to seek repose at more than twenty-five fathoms in the bowels of the deep. But there, what quiet, what silence, what peace! Who could have told that such a hurricane had been let loose on the surface of that ocean?

Chapter XX

From Latitude 47° 24’ to Longitude 17° 28’

IN CONSEQUENCE OF THE storm, we had been thrown eastward once more. All hope of escape on the shores of New York or St. Lawrence had faded away; and poor Ned, in despair, had isolated himself like Captain Nemo. Conseil and I, however, never left each other. I said that the *Nautilus* had gone aside to the east. I should have said (to be more exact) the northeast. For some days it wandered, first on the surface and then beneath it, amid those fogs so dreaded by sailors. What accidents are due to these thick fogs! What shocks upon these reefs when the wind drowns the breaking of the waves! What collisions between vessels, in spite of their warning lights, whistles, and alarm-bells! And the bottoms of these seas look like a field of battle, where still lie all the conquered of the ocean; some old and already incrusted, others fresh and reflecting from their iron bands and copper plates the brilliancy of our lantern.

On the 15th of May we were at the extreme south of the Bank of Newfoundland. This bank consists of alluvia, or large heaps of organic matter, brought either from the equator by the Gulf Stream, or from the North Pole by the counter-current of cold water which skirts the American coast. There also are heaped up those erratic blocks which are carried along by the broken ice; and close by, a vast charnel-house of mollusks or zoöphytes, which perish here by millions. The depth of the sea is not great at Newfoundland—not more than some hundreds of fathoms; but toward the south is a depression of 1,500 fathoms. There the Gulf Stream widens. It loses some of its speed and some of its temperature, but it becomes a sea.

It was on the 17th of May, about 500 miles from Heart’s Content, at a depth of more than 1,400 fathoms, that I saw the electric cable lying on the bottom. Conseil, to whom I had not mentioned it, thought at first that it was a gigantic sea-serpent. But I undeceived the worthy fellow, and by way of consolation related several particulars in the laying of this cable. The first one was laid in the years 1857 and 1858; but after transmitting about 400 telegrams, would not act any longer. In 1863, the engineers constructed another one, measuring 2,000 miles in length, and weighing 4,500 tons, which was embarked on the Great Eastern.[40] This attempt also failed.

On the 25th of May, the *Nautilus,* being at a depth of more than 1,918 fathoms, was on the precise spot where the rupture occurred which ruined the enterprise. It was within 638 miles of the coast of Ireland; and at half-past two in the afternoon they discovered that communication with Europe had ceased.

The electricians on board resolved to cut the cable before fishing it up, and at eleven o'clock at night they had recovered the damaged part. They made another point and spliced it, and it was once more submerged. But some days after it broke again, and in the depths of the ocean could not be recaptured. The Americans, however, were not discouraged. Cyrus Field, the bold promoter of the enterprise, as he had sunk all his own fortune, set a new subscription on foot, which was at once answered, and another cable was constructed on better principles. The bundles of conducting wires were each enveloped in gutta-percha, and protected by a wadding of hemp, contained in a metallic covering. The Great Eastern sailed on the 13th of July, 1866. The operation worked well. But one incident occurred. Several times in unrolling the cable they observed that nails had been recently forced into it, evidently with the motive of destroying it. Captain Anderson, the officers and engineers, consulted together, and had it posted up that if the offender was surprised on board, he would be thrown without further trial into the sea. From that time the criminal attempt was never repeated.

On the 23d of July the Great Eastern was not more than 500 miles from Newfoundland, when they telegraphed from Ireland news of the armistice concluded between Prussia and Austria after Sadowa. On the 27th, in the midst of heavy fogs, they reached the port of Heart's Content. The enterprise was successfully terminated; and for its first dispatch young America addressed old Europe in these words of wisdom so rarely understood: "Glory to God in the highest, and on earth peace, good-will toward men."

I did not expect to find the electric cable in its primitive state, such as it was on leaving the manufactory. The long serpent, covered with the remains of shells, bristling with foraminiferæ, was incrusted with a strong coating which served as a protection against all boring mollusks. It lay quietly sheltered from the motions of the sea, and under a favorable pressure for the transmission of the electric spark which passes from Europe to America in 0.32 of a second. Doubtless this cable will last for a great length of time, for they find that the gutta-percha covering is improved by the sea-water. Besides, on this level, so well chosen, the cable is never so deeply submerged as to cause it to break. The *Nautilus* followed it to the lowest depth, which was more than 2,212 fathoms, and there it lay without any anchorage and then we reached the spot where the accident had taken place in 1863. The bottom of the ocean then formed a valley about 100 miles broad, in which Mont Blanc might have been placed without its summit appearing above the waves. This valley is closed at the east by a perpendicular wall more than 2,000 yards high. We arrived there on the 28th of May, and the *Nautilus* was then not more than 120 miles from Ireland.

Was Captain Nemo going to land on the British Isles? No. To my great surprise he made for the south, once more coming back toward European seas. In rounding the Emerald Isle, for one instant I caught sight of Cape Clear, and the light which guides the thousands of vessels leaving Glasgow or Liverpool. An important question then arose in my mind. Did the *Nautilus* dare entangle itself in the Mauch?[ce] Ned Land, who had reappeared since we had been

nearing land, did not cease to question me. How could I answer? Captain Nemo remained invisible. After having shown the Canadian a glimpse of American shores, was he going to show me the coast of France?

But the *Nautilus* was still going southward. On the 30th of May, it passed in sight of Land's End, between the extreme point of England and the Scilly Isles, which were left to starboard. If he wished to enter the Mauch he must go straight to the east. He did not do so.

During the whole of the 31st of May, the *Nautilus* described a series of circles on the water, which greatly interested me. It seemed to be seeking a spot it had some trouble in finding. At noon, Captain Nemo himself came to work the ship's log. He spoke no word to me, but seemed gloomier than ever. What could sadden him thus? Was it his proximity to European shores? Had he some recollections of his abandoned country? If not, what did he feel? Remorse or regret? For a long while this thought haunted my mind, and I had a kind of presentiment that before long chance would betray the captain's secrets.

The next day, the 1st of June, the *Nautilus* continued the same process. It was evidently seeking some particular spot in the ocean. Captain Nemo took the sun's altitude as he had done the day before. The sea was beautiful, the sky clear. About eight miles to the east, a large steamvessel could be discerned on the horizon. No flag fluttered from its mast, and I could not discover its nationality. Some minutes before the sun passed the meridian, Captain Nemo took his sextant, and watched with great attention. The perfect rest of the water greatly helped the operation. The *Nautilus* was motionless; it neither rolled nor pitched.

I was on the platform when the altitude was taken, and the captain pronounced these words—"It is here."

He turned and went below. Had he seen the vessel which was changing its course and seemed to be nearing us? I could not tell. I returned to the saloon. The panels closed, I heard the hissing of the water in the reservoirs. The *Nautilus* began to sink, following a vertical line, for its screw communicated no motion to it. Some minutes later it stopped at a depth of more than 420 fathoms, resting on the ground. The luminous ceiling was darkened, then the panels were opened, and through the glass I saw the sea brilliantly illuminated by the rays of our lantern for at least half a mile round us.

I looked to the port side, and saw nothing but an immensity of quiet waters. But to starboard, on the bottom appeared a large protuberance, which at once attracted my attention. One would have thought it a ruin buried under a coating of white shells, much resembling a covering of snow. Upon examining the mass attentively, I could recognize the ever-thickening form of a vessel bare of its masts, which must have sunk. It certainly belonged to past times. This wreck, to be thus incrusted with the lime of the water, must already be able to count many years passed at the bottom of the ocean.

What was this vessel? Why did the *Nautilus* visit its tomb? Could it have been aught but a shipwreck which had drawn it under the water? I knew not what to think, when near me in a slow voice I heard Captain Nemo say:

"At one time this ship was called the *Marseillais.* It carried seventy-four guns, and was launched in 1762. In 1778, the 13th of August, commanded by La Poype-Vertrieux, it fought boldly against the *Preston.* In 1779, on the 4th of July, it was at the taking of Grenada, with the squadron of Admiral Estaing. In 1781, on the 5th of September, it took part in the battle of Comte de Grasse, in Chesapeake Bay. In 1794, the French Republic changed its name. On the 16th of April, in the same year, it joined the squadron of Villaret Joyeuse, at Brest, being intrusted with the escort of a cargo of corn coming from America, under the command of Admiral Van Stabel. On the 11th and 12th Prairal of the second year,[41] this squadron fell in with an English vessel. Sir, to-day is the 13th Prairal, the 1st of June, 1868. It is now seventy-four years ago, day for day, on this very spot, in latitude 47° 24', longitude 17° 28', that this vessel, after fighting heroically, losing its three masts, with the water in its hold, and the third of its crew disabled, preferred sinking with its 356 sailors to surrendering; and nailing its colors to the poop, disappeared under the waves to the cry of 'Long live the Republic!' "

"The *Avenger!"*[cf] I exclaimed.

"Yes, sir, the Avenger! A good name!" muttered Captain Nemo, crossing his arms.

Chapter XXI

A Hecatomb[cg]

THE WAY OF DESCRIBING this unlooked-for scene, the history of the patriot ship, told at first so coldly, and the emotion with which this strange man pronounced the last words, the name of the *Avenger,* the significance of which could not escape me, all impressed itself deeply on my mind. My eyes did not leave the captain, who, with his hand stretched out to sea, was watching with a glowing eye the glorious wreck. Perhaps I was never to know who he was, from whence he came, or where he was going to, but I saw the man move, and apart from the savant. It was no common misanthropy which had shut Captain Nemo and his companions within the *Nautilus,* but a hatred, either monstrous or sublime, which time could never weaken. Did this hatred still seek for vengeance? The future would soon teach me that. But the *Nautilus* was rising slowly to the surface of the sea, and the form of the *Avenger* disappeared by degrees from my sight. Soon a slight rolling told me that we were in the open air. At that moment a dull boom was heard. I looked at the captain. He did not move.

"Captain!" said I.

He did not answer. I left him and mounted the platform. Conseil and the Canadian were already there.

"Where did that sound come from?" I asked.

"It was a gunshot," replied Ned Land.

I looked in the direction of the vessel I had already seen. It was nearing the *Nautilus,* and we could see that it was putting on steam. It was within six miles of us.

"What is that ship, Ned?"

"By its rigging, and the height of its lower masts," said the Canadian, "I bet she is a ship of war. May it reach us; and, if necessary, sink this cursed *Nautilus."*

"Friend Ned," replied Conseil, "what harm can it do to the *Nautilus?* Can it attack it beneath the waves? Can it cannonade us at the bottom of the sea?"

"Tell me, Ned," said I, "can you recognize what country she belongs to?"

The Canadian knitted his eyebrows, dropped his eyelids, and screwed up the corners of his eyes, and for a few moments fixed a piercing look upon the vessel.

"No, sir," he replied; "I cannot tell what nation she belongs to, for she shows no colors. But I can declare she is a man-of-war, for a long pennant flutters from her mainmast."

For a quarter of an hour we watched the ship which was steaming toward us. I could not, however, believe that she could see the *Nautilus* from that distance, and still less that she could know what this submarine engine was. Soon the Canadian informed me that she was a large armored two-decker ram. A thick black smoke was pouring from her two funnels. Her closely furled sails were stopped to her yards. She hoisted no flag at her mizzen-peak. The distance prevented us from distinguishing the colors of her pennant, which floated like a thin ribbon. She advanced rapidly. If Captain Nemo allowed her to approach, there was a chance of salvation for us.

"Sir," said Ned Land, "if that vessel passes within a mile of us, I shall throw myself into the sea, and I should advise you to do the same."

I did not reply to the Canadian's suggestion, but continued watching the ship. Whether English, French, American, or Russian, she would be sure to take us in if we could only reach her. Presently a white smoke burst from the forepart of the vessel; some seconds after the water, agitated by the fall of a heavy body, splashed the stern of the *Nautilus,* and shortly afterward a loud explosion struck my ear.

"What! They are firing at us!" I exclaimed.

"So please you, sir," said Ned, "they have recognized the unicorn,[ch] and they are firing at us."

"But," I exclaimed, "surely they can see that there are men in the case?"

"It is, perhaps, because of that," replied Ned Land, looking at me.

A whole flood of light burst upon my mind. Doubtless they knew now how to believe the stories of the pretended monster. No doubt, on board the *Abraham Lincoln,* when the Canadian struck it with the harpoon, Commander Farragut had recognized in the supposed narwhal a submarine vessel, more dangerous than a supernatural cetacean. Yes, it must have been so; and on every sea they were now seeking this engine of destruction. Terrible indeed if, as we supposed, Captain Nemo employed the *Nautilus* in works of vengeance! On the night when we were imprisoned in that cell, in the midst of the Indian Ocean, had he not attacked some vessel? The man buried in the coral cemetery, had he not been a victim to the shock caused by the *Nautilus*? Yes, I repeat it, it must be so. One part of the mysterious existence of Captain Nemo had been unveiled; and, if his identity had not been recognized, at least, the nations united against him were no longer hunting a chimerical creature, but a man who had vowed a deadly hatred against them. All the formidable past

rose before me. Instead of meeting friends on board the approaching ship, we could only expect pitiless enemies. But the shot rattled about us. Some of them struck the sea and ricochetted, losing themselves in the distance. But none touched the *Nautilus.* The vessel was not more than three miles from us. In spite of the serious cannonade, Captain Nemo did not appear on the platform; but, if one of the conical projectiles had struck the shell of the *Nautilus,* it would have been fatal. The Canadian then said, “Sir, we must do all we can to get out of this dilemma. Let us signal them. They will then, perhaps, understand that we are honest folks.”

Ned Land took his handkerchief to wave in the air; but he had scarcely displayed it, when he was struck down by an iron hand, and fell, in spite of his great strength, upon the deck.

“Fool!” exclaimed the captain. “Do you wish to be pierced by the spur of the *Nautilus* before it is hurled at this vessel?”

Captain Nemo was terrible to hear; he was still more terrible to see. His face was deadly pale, with a spasm at his heart. For an instant it must have ceased to beat. His pupils were fearfully contracted. He did not *speak,* he *roared,* as, with his body thrown forward, he wrung the Canadian’s shoulders. Then, leaving him, and turning to the ship of war, whose shot was still raining around him, he exclaimed, with a powerful voice, “Ah, ship of an accursed nation, you know who I am! I do not want your colors to know you by. Look and I will show you mine!”

And on the forepart of the platform Captain Nemo unfurled a black flag, similar to the one he had placed at the South Pole. At that moment a shot struck the shell of the *Nautilus* obliquely, without piercing it; and, rebounding near the captain, was lost in the sea. He shrugged his shoulders; and addressing me, said shortly, “Go down, you and your companions, go down!”

“Sir,” I exclaimed, “are you going to attack this vessel?”

“Sir, I am going to sink it.”

“You will not do that?”

“I shall do it,” he replied coldly. “And I advise you not to judge me, sir. Fate has shown you what you ought not to have seen. The attack has begun; go down.”

“What is this vessel?”

“You do not know? Very well! So much the better! Its nationality to you, at least, will be a secret. Go down!”

We could but obey. About fifteen of the sailors surrounded the captain, looking with implacable hatred at the vessel nearing them. One could feel that the same desire of vengeance animated every soul. I went down at the moment another projectile struck the *Nautilus,* and I heard the captain exclaim:

“Strike, mad vessel! Shower your useless shot! And then, you will not escape the spur of the *Nautilus.* But it is not here that you shall perish! I would not have your ruins mingle with those of the *Avenger!”*

I reached my room. The captain and his second had remained on the platform. The screw was set in motion, and the *Nautilus,* moving with speed, was soon beyond the reach of the ship’s guns. But the pursuit continued, and Captain Nemo contented himself with keeping his distance.

About four in the afternoon, being no longer able to contain my impatience, I went to the central staircase. The panel was open, and I ventured on to the platform. The captain was still walking up and down with an agitated step. He was looking at the ship, which was five or six miles to leeward.

He was going round it like a wild beast, and drawing it eastward, he allowed them to pursue. But he did not attack. Perhaps he still hesitated? I wished to mediate once more. But I had scarcely spoken, when Captain Nemo imposed silence, saying:

“I am the law, and I am the judge! I am the oppressed, and there is the oppressor! Through him I have lost all that I loved, cherished, and venerated —country, wife, children, father, and mother. I saw all perish! All that I hate is there! Say no more!”

I cast a last look at the man-of-war, which was putting on steam, and rejoined Ned and Conseil.

“We will fly!” I exclaimed.

“Good!” said Ned. “What is this vessel?”

“I do not know; but whatever it is, it will be sunk before night. In any case, it is better to perish with it, than be made accomplices in a retaliation, the justice of which we cannot judge.”

“That is my opinion too,” said Ned Land coolly. “Let us wait for night.”

Night arrived. Deep silence reigned on board. The compass showed that the *Nautilus* had not altered its course. It was on the surface, rolling slightly. My companions and I resolved to fly when the vessel should be near enough either to hear us or to see us; for the moon, which would be full in two or three days, shone brightly. Once on board the ship, if we could not prevent the blow which threatened it, we could, at least we would, do all that circumstances would allow. Several times I thought the *Nautilus* was preparing for attack; but Captain Nemo contented himself with allowing his adversary to approach, and then fled once more before it.

Part of the night passed without any incident. We watched the opportunity for action. We spoke little, for we were too much moved. Ned Land would have thrown himself into the sea, but I forced him to wait. According to my idea, the *Nautilus* would attack the ship at her water-line, and then it would

not only be possible, but easy to fly.

At three in the morning, full of uneasiness, I mounted the platform. Captain Nemo had not left it. He was standing at the forepart near his flag, which a slight breeze displayed above his head. He did not take his eyes from the vessel. The intensity of his look seemed to attract, and fascinate, and draw it onward more surely than if he had been towing it. The moon was then passing the meridian. Jupiter was rising in the east. Amid this peaceful scene of nature, sky and ocean rivaled each other in tranquillity, the sea offering to the orbs of night the finest mirror they could ever have in which to reflect their image. As I thought of the deep calm of these elements, compared with all those passions brooding imperceptibly within the *Nautilus,* I shuddered.

The vessel was within two miles of us. It was ever nearing that phosphorescent light which showed the presence of the *Nautilus.* I could see its green and red lights, and its white lantern hanging from the large mizzenmast. An indistinct vibration quivered through its rigging, showing that the furnaces were heated to the uttermost. Sheaves of sparks and red ashes flew from the funnels, shining in the atmosphere like stars.

I remained thus until six in the morning, without Captain Nemo noticing me. The ship stood about a mile and a half from us, and with the first dawn of day the firing began afresh. The moment could not be far off when, the *Nautilus* attacking its adversary, my companions and myself should forever leave this man. I was preparing to go down to remind them when the second mounted the platform, accompanied by several sailors. Captain Nemo either did not or would not see them. Some steps were taken which might be called the signal for action. They were very simple. The iron balustrade around the platform was lowered, and the lantern and pilot cages were pushed within the shell until they were flush with the deck. The long surface of the steel cigar no longer offered a single point to check its maneuvers. I returned to the saloon. The *Nautilus* still floated; some streaks of light were filtering through the liquid beds. With the undulations of the waves the windows were brightened by the red streaks of the rising sun, and this dreadful day of the 2d of June had dawned.

At five o'clock, the log showed that the speed of the *Nautilus* was slackening, and I knew that it was allowing them to draw nearer. Besides, the reports were heard more distinctly, and the projectiles, laboring through the ambient water, were extinguished with a strange hissing noise.

"My friends," said I, "the moment is come. One grasp of the hand, and may God protect us!"

Ned Land was resolute, Conseil calm, myself so nervous that I knew not how to contain myself. We all passed into the library; but the moment I pushed the door opening on the central staircase, I heard the upper panel close sharply. The Canadian rushed on to the stairs, but I stopped him. A well-known hissing noise told me that the water was running into the reservoirs, and in a few minutes the *Nautilus* was some yards beneath the surface of the

waves. I understood the maneuver. It was too late to act. The *Nautilus* did not wish to strike at the impenetrable cuirass, but below the water-line, where the metallic covering no longer protected it.

We were again imprisoned, unwilling witnesses of the dreadful drama that was preparing. We had scarcely time to reflect; taking refuge in my room, we looked at each other without speaking. A deep stupor had taken hold of my mind; thought seemed to stand still. I was in that painful state of expectation preceding a dreadful report. I waited, I listened; every sense was merged in that of hearing! The speed of the *Nautilus* was accelerated. It was preparing to rush. The whole ship trembled. Suddenly I screamed. I felt the shock, but comparatively light. I felt the penetrating power of the steel spur. I heard rattlings and scrapings. But the *Nautilus,* carried along by its propelling power, passed through the mass of the vessel, like a needle through sail-cloth!

I could stand it no longer. Mad, out of my mind, I rushed from my room into the saloon. Captain Nemo was there, mute, gloomy, implacable; he was looking through the port panel. A large mass cast a shadow on the water; and that it might lose nothing of her agony, the *Nautilus* was going down into the abyss with her. Ten yards from me I saw the open shell through which the water was rushing with the noise of thunder, then the double line of guns and the netting. The bridge was covered with black agitated shadows.

The water was rising. The poor creatures were crowding the ratlings, clinging to the masts, struggling underwater. It was a human ant-heap overtaken by the sea. Paralyzed, stiffened with anguish, my hair standing on end, with eyes wide open, panting, without breath and without voice, I too was watching! An irresistible attraction glued me to the glass! Suddenly an explosion took place. The compressed air blew up her decks, as if the magazines had caught fire. Then the unfortunate vessel sank more rapidly. Her topmast, laden with victims, now appeared; then her spars, bending under the weight of men; and last of all, the top of her mainmast. Then the dark mass disappeared, and with it the dead crew, drawn down by the strong eddy.

I turned to Captain Nemo. That terrible avenger, a perfect archangel of hatred, was still looking. When all was over, he turned to his room, opened the door, and entered. I followed him with my eyes. On the end wall beneath his heroes, I saw the portrait of a woman still young, and two little children. Captain Nemo looked at them for some moments, stretched his arms toward them, and kneeling down burst into deep sobs.

Chapter XXII

The Last Words of Captain Nemo

THE PANELS HAD CLOSED on this dreadful vision, but light had not returned to the saloon: all was silence and darkness within the *Nautilus.* At wonderful speed, a hundred feet beneath the water, it was leaving this desolate spot. Whither was it going? To the north or south? Where was the man flying to after such dreadful retaliation? I had returned to my room, where Ned and Conseil had remained silent enough. I felt an insurmountable horror for Captain Nemo. Whatever he had suffered at the hands of these men, he had no right to punish thus. He had made me, if not an accomplice, at least a witness of his vengeance. At eleven the electric light reappeared. I passed into the saloon. It was deserted. I consulted the different instruments. The *Nautilus* was flying northward at the rate of twenty-five miles an hour, now on the surface, and now thirty feet below it. On taking the bearings by the chart, I saw that we were passing the mouth of the Manche, and that our course was hurrying us toward the northern seas at a frightful speed. That night we had crossed two hundred leagues of the Atlantic. The shadows fell, and the sea was covered with darkness until the rising of the moon. I went to my room, but could not sleep. I was troubled with a dreadful nightmare. The horrible scene of destruction was continually before my eyes. From that day, who could tell into what part of the North Atlantic basin the *Nautilus* would take us? Still with unaccountable speed, still in the midst of these northern fogs, would it touch at Spitzbergen, or on the shores of Nova Zembla? Should we explore those unknown seas, the White Sea, the Sea of Kara, the Gulf of Obi, the Archipelago of Liarrov, and the unknown coast of Asia? I could not say. I could no longer judge of the time that was passing. The clocks had been stopped on board. It seemed, as in polar countries, that night and day no longer followed their regular course. I felt myself being drawn into that strange region where the foundered imagination of Edgar Poe roamed at will. Like the fabulous Gordon Pym, at every moment I expected to see “that veiled human figure, of larger proportions than those of any inhabitant of the earth, thrown across the cataract which defends the approach to the pole.”[42] I estimated (though perhaps I may be mistaken)—I estimated this adventurous course of the *Nautilus* to have lasted fifteen or twenty days. And I know not how much longer it might have lasted, had it not been for the catastrophe which ended this voyage. Of Captain Nemo I saw nothing whatever now, nor of his second. Not a man of the crew was visible for an instant. The *Nautilus* was almost incessantly underwater. When we came to the surface to renew the air, the panels opened and shut mechanically. There were no more marks on

the planisphere. I knew not where we were. And the Canadian, too, his strength and patience at an end, appeared no more. Conseil could not draw a word from him, and fearing that, in a dreadful fit of madness, he might kill himself, watched him with constant devotion. One morning (what date it was I could not say), I had fallen into a heavy sleep toward the early hours, a sleep both painful and unhealthy, when I suddenly awoke. Ned Land was leaning over me, saying in a low voice, “We are going to fly.”

I sat up.

“When shall we go?” I asked.

“To-night. All inspection on board the *Nautilus* seems to have ceased. All appear to be stupefied. You will be ready, sir?”

“Yes; where are we?”

“In sight of land. I took the reckoning this morning in the fog—twenty miles to the east.”

“What country is it?”

“I do not know, but whatever it is we will take refuge there.”

“Yes, Ned, yes. We will fly to-night, even if the sea should swallow us up.”

“The sea is bad, the wind violent, but twenty miles in that light boat of the *Nautilus* does not frighten me. Unknown to the crew I have been able to procure food and some bottles of water.”

“I will follow you.”

“But,” continued the Canadian, “if I am surprised I will defend myself; I will force them to kill me.”

“We will die together, friend Ned.”

I had made up my mind to all. The Canadian left me. I reached the platform, on which I could with difficulty support myself against the shock of the waves. The sky was threatening, but as land was in those thick brown shadows we must fly. I returned to the saloon, fearing and yet hoping to see Captain Nemo, wishing and yet not wishing to see him. What could I have said to him? Could I hide the involuntary horror with which he inspired me? No. It was better that I should not meet him face to face; better to forget him. And yet—How long seemed that day, the last that I should pass in the *Nautilus.* I remained alone. Ned Land and Conseil avoided speaking, for fear of betraying themselves. At six I dined, but I was not hungry; I forced myself to eat in spite of my disgust, that I might not weaken myself. At half-past six Ned Land came to my room saying, “We shall not see each other again before our departure. At ten the moon will not be risen. We will profit by the darkness. Come to the boat; Conseil and I will wait for you.”

The Canadian went out without giving me time to answer. Wishing to

verify the course of the *Nautilus,* I went to the saloon. We were running N.N.E. at frightful speed and more than fifty yards deep. I cast a last look on these wonders of nature, on the riches of art heaped up in this museum, upon the unrivaled collection destined to perish at the bottom of the sea with him who had formed it. I wished to fix an indelible impression of it in my mind. I remained an hour thus, bathed in the light of that luminous ceiling, and passing in review those treasures shining under their glasses. Then I returned to my room.

I dressed myself in strong sea clothing. I collected my notes, placing them carefully about me. My heart beat loudly. I could not check its pulsations. Certainly my trouble and agitation would have betrayed me to Captain Nemo's eyes. What was he doing at this moment? I listened at the door of his room. I heard steps. Captain Nemo was there. He had not gone to rest. At every moment I expected to see him appear and ask me why I wished to fly. I was constantly on the alert. My imagination magnified everything. The impression became at last so poignant that I asked myself if it would not be better to go to the captain's room, see him face to face, and brave him with look and gesture.

It was the inspiration of a madman; fortunately I resisted the desire, and stretched myself on my bed to quiet my bodily agitation. My nerves were somewhat calmer, but in my excited brain I saw over again all my existence on board the *Nautilus;* every incident, either happy or unfortunate, which had happened since my disappearance from the *Abraham Lincoln*—the submarine hunt, the Torres Straits, the savages of Papua, the running ashore, the coral cemetery, the passage of Suez, the island of Santorin, the Cretan diver, Vigo Bay, Atlantis, the iceberg, the South Pole, the imprisonment in the ice, the fight among the poulps, the storm in the Gulf Stream, the *Avenger,* and the horrible scene of the vessel sunk with all her crew. All these events passed before my eyes like scenes in a drama. Then Captain Nemo seemed to grow enormously, his features to assume superhuman proportions. He was no longer my equal, but a man of the waters, the genie of the sea.

It was then half-past nine. I held my head between my hands to keep it from bursting. I closed my eyes, I would not think any longer. There was another half-hour to wait, another half-hour of a nightmare, which might drive me mad.

At that moment I heard the distant strains of the organ, a sad harmony to an undefinable chant, the wail of a soul longing to break these earthly bonds. I listened with every sense, scarcely breathing; plunged, like Captain Nemo, in that musical ecstasy, which was drawing him in spirit to the end of life.

Then a sudden thought terrified me. Captain Nemo had left his room. He was in the saloon, which I must cross to fly. There I should meet him for the last time. He would see me, perhaps speak to me. A gesture of his might destroy me, a single word chain me on board.

But ten was about to strike. The moment had come for me to leave my room and join my companions.

I must not hesitate, even if Captain Nemo himself should rise before me. I opened my door carefully; and even then, as it turned on its hinges, it seemed to me to make a dreadful noise. Perhaps it only existed in my own imagination.

I crept along the dark stairs of the *Nautilus,* stopping at each step to check the beating of my heart. I reached the door of the saloon, and opened it gently. It was plunged in profound darkness. The strains of the organ sounded faintly. Captain Nemo was there. He did not see me. In the full light I do not think he would have noticed me, so entirely was he absorbed in the ecstasy.

I crept along the carpet, avoiding the slightest sound which might betray my presence. I was at least five minutes reaching the door, at the opposite side, opening into the library.

I was going to open it, when a sigh from Captain Nemo nailed me to the spot. I knew that he was rising. I could even see him, for the light from the library came through to the saloon. He came toward me silently, with his arms crossed, gliding like a specter rather than walking. His breast was swelling with sobs; and I heard him murmur these words (the last which ever struck my ear):

“Almighty God! Enough! Enough!”

Was it a confession of remorse which thus escaped from this man’s conscience?

In desperation I rushed through the library, mounted the central staircase, and following the upper flight reached the boat. I crept through the opening, which had already admitted my two companions.

“Let us go! Let us go!” I exclaimed.

“Directly!” replied the Canadian.

The orifice in the plates of the *Nautilus* was first closed, and fastened down by means of a false key, with which Ned Land had provided himself; the opening in the boat was also closed. The Canadian began to loosen the bolts which still held us to the submarine boat.

Suddenly a noise within was heard. Voices were answering each other loudly. What was the matter? Had they discovered our flight? I felt Ned Land slipping a dagger into my hand.

“Yes,” I murmured, “we know how to die!”

The Canadian had stopped in his work. But one word many times repeated, a dreadful word, revealed the cause of the agitation spreading on board the *Nautilus.* It was not we the crew were looking after!

“The Maëlstrom! The Maëlstrom!” I exclaimed.

The Maëlstrom! Could a more dreadful word in a more dreadful situation

have sounded in our ears! We were then upon the dangerous coast of Norway. Was the *Nautilus* being drawn into this gulf at the moment our boat was going to leave its sides? We knew that at the tide the pent-up waters between the islands of Ferroe and Lofoten rush with irresistible violence, forming a whirlpool from which no vessel ever escapes. From every point of the horizon enormous waves were meeting, forming a gulf justly called the “Navel of the Ocean,” whose power of attraction extends to a distance of twelve miles. There, not only vessels, but whales, are sacrificed, as well as white bears from the northern regions.

It is thither that the *Nautilus,* voluntarily or involuntarily, had been run by the captain.

It was describing a spiral, the circumference of which was lessening by degrees, and the boat, which was still fastened to its side, was carried along with giddy speed. I felt that sickly giddiness which arises from long-continued whirling round.

We were in dread. Our horror was at its height, circulation had stopped, all nervous influence was annihilated, and we were covered with cold sweat, like a sweat of agony! And what noise around our frail bark! What roarings repeated by the echo miles away! What an uproar was that of the waters broken on the sharp rocks at the bottom, where the hardest bodies are crushed, and trees worn away, “with all the fur rubbed off,” according to the Norwegian phrase!

What a situation to be in! We rocked frightfully. The *Nautilus* defended itself like a human being. Its steel muscles cracked. Sometimes it seemed to stand upright, and we with it!

“We must hold on,” said Ned, “and look after the bolts. We may still be saved if we stick to the *Nautilus*——”

He had not finished the words when we heard a crashing noise, the bolts gave way, and the boat, torn from its groove, was hurled like a stone from a sling into the midst of the whirlpool.

My head struck on a piece of iron, and with the violent shock I lost all consciousness.

Chapter XXIII

Conclusion

THUS ENDS THE VOYAGE under the seas. What passed during that night—how the boat escaped from the eddies of the Maelstrom, how Ned Land, Conseil, and myself ever came out of the gulf—I cannot tell. But when I returned to consciousness, I was lying in a fisherman's hut, on the Lofoten Isles. My two companions, safe and sound, were near me holding my hands. We embraced each other heartily.

At that moment we could not think of returning to France. The means of communication between the north of Norway and the south are rare, and I am therefore obliged to wait for the steamboat running monthly from Cape North.

And among the worthy people who have so kindly received us I revise my record of these adventures once more. Not a fact has been omitted, not a detail exaggerated. It is a faithful narrative of this incredible expedition in an element inaccessible to man, but to which Progress will one day open a road.

Shall I be believed? I do not know. And it matters little, after all. What I now affirm is, that I have a right to speak of these seas, under which, in less than ten months, I have crossed 20,000 leagues in that submarine tour of the world which has revealed so many wonders.

But what has become of the *Nautilus?* Did it resist the pressure of the Maelstrom? Does Captain Nemo still live?[ci] And does he still follow under the ocean those frightful retaliations? Or did he stop after that last hecatomb?

Will the waves one day carry to him this manuscript containing the history of his life? Shall I ever know the name of this man? Will the missing vessel tell us by its nationality that of Captain Nemo?

I hope so. And I also hope that his powerful vessel has conquered the sea at its most terrible gulf, and that the *Nautilus* has survived where so many other vessels have been lost! If it be so, if Captain Nero still inhabits the ocean, his adopted country, may hatred be appeased in that savage heart! May the contemplation of so many wonders extinguish forever the spirit of vengeance! May the judge disappear, and the philosopher continue the peaceful exploration of the sea! If his destiny be strange, it is also sublime. Have I not understood it myself? Have I not lived ten months of this unnatural life? And to the question asked by Ecclesiastes[cj] 3,000 years ago, "That which is far off and exceeding deep, who can find it out?" two men alone of all now

living have the right to give an answer:

CAPTAIN NEMO AND MYSELF.

Endnotes

1 (p. 5) *"an enormous thing," ... infinitely larger and more rapid in its movements than a whale:* Verne did not fabricate this idea. Sea monsters large enough to be mistaken for an island had been reported as early as the mid-eighteenth century. In *A Natural History of Norway* (1752), Danish theologian Erik Pontoppidan claimed the existence of an animal as large as a floating island with tentacles strong enough to pull a ship to the bottom of the sea; he called the kraken "the largest and most surprising of all the animal creation." These rumors were made credible by such discoveries as the washed-up corpse of a giant squid with 60-foot tentacles, found in the South Pacific in 1887 (Grann, "A Reporter at Large: The Squid Hunter"; see "For Further Reading").

2 (p. 6) *a distance of more than seven hundred nautical leagues:* In nineteenth-century France, a league equaled about 2.16 miles, so 700 nautical leagues would have been 1,512 miles, and 20,000 leagues would have equaled 43,200 miles. Today the league has been standardized to equal 3 nautical miles.

3 . (p. 7) *the white whale, the terrible "Moby Dick":* The "title character" of American writer Herman Melville's 1851 novel, Moby Dick is a huge, ferocious white whale that is pursued by Ahab, the obsessed captain of the *Pequod.*

4 . (p. 7) *Aristotle and Pliny ... who admitted the existence of these monsters:* In *History of Animals,* Greek philosopher Aristotle (384-322 B.C.), known for his writings on logic and natural science, mentions the existence of huge sea serpents that pull oxen from the shore and devour them. Roman naturalist and scholar Pliny the Elder (A.D. 23-79) wrote in *Historia naturalis* (book 9) about a 700-pound sea monster with arms 30 feet long that haunted the coast of Spain.

5 . (p. 8) *Linnæus:* Swedish naturalist and botanist Carolus Linnaeus (also known as Carl von Linné, 1707-1778) established the binomial system of scientific classification, in which species of plants and animals are identified by a two-part Latin name that includes their genus and their species.

6 . (p. 8) *Hippolytus:* In Greek mythology, Hippolytus, son of the Greek king Theseus, rejects the advances of Aphrodite, goddess of beauty and love. Seeking revenge, Aphrodite causes Hippolytus' stepmother to fall in love with him, which leads Theseus to banish and curse him. As Hippolytus leaves the kingdom, his chariot is attacked by a sea monster, and his frightened horses drag him to his death.

7 . (p. 9) *the* Scotia, *of the Cunard Company's line:* In 1863 the steamship *Scotia* set the record for the fastest journey between New York and Liverpool,

England, when it made the trip in less than nine days. The *Scotia* was owned by Sir Samuel Cunard (1788-1865), British founder of the British and North American Royal Mail Steam Packet Company, known as the Cunard Line. Cunard was one of the first to use steam to power a fleet of ships.

8 (p. 14) *Commander Farragut:* Admiral David Glasgow Farragut (1801-1870) was a hero of the American Civil War who defeated the Confederates at New Orleans.

9 . (p. 15) *I no more thought of pursuing the unicorn than of attempting the passage of the North Sea:* In 1867 European traders and navigators were seeking to navigate the dangerous Northwest Passage, a northern passage to India that would have considerably shortened the trading route between the two continents. Many renowned naval explorers died in the attempt. The Northwest Passage was first successfully navigated by Norwegian explorer Roald Amundsen in 1906, just months after Verne's death.

10 (p. 19) *hoisting the American colors ... whose thirty-nine stars:* In 1867 there were thirty-seven, not thirty-nine, stars on the American flag. New stars were added when new states joined the confederation of states collectively known as the United States of America.

11 (p. 20) *The frigate might have been called the Argus, for a hundred reasons:* The reference is to Argus, a creature in Greek mythology with 100 eyes; since he closed only a few of his eyes at a time while he slept, the goddess Hera used him as a watchman over Ios, the lover of her husband, Zeus. When Argus was killed, Hera placed his eyes in the tail of the peacock, her favorite bird.

12 (p. 21) *that old language of Rabelais, which is still in use in some Canadian provinces:* The Canadian-French dialect preserved an older syntax and vocabulary than the mainland French Aronnax would have spoken. François Rabelais (c.1490-1553) is known for his satirical novels, including *Pantagruel* and *Gargantua.*

13 (p. 34) *We heaved the log, and calculated that the* Abraham Lincoln *was going at the rate of 18½ miles an hour:* The "log" was a piece of wood weighted with lead and attached to a ship by a line tied with knots at regular intervals. Seamen tossed the log from the ship and measured the speed at which the ship moved away from the log by counting the number of knots played out every 28 seconds. This method of measuring speed gave rise to the term "knot" (meaning 1 nautical mile per hour) in nautical terminology.

14 . (p. 36) *I am a good swimmer (though without pretending to rival Byron or Edgar Poe, who were masters of the art):* In 1810 English Romantic poet George Gordon Byron (1788-1824), known as Lord Byron, swam the Hellespont, or Dardanelles, the strait between Turkey and Europe. American gothic and mystery writer Edgar Allan Poe (1809-1849) was a strong influence on Verne, although he was not reported to be a great swimmer.

15 . (p. 45) *They evidently understood neither the language of Arago nor of Faraday:* That is, the strangers don't understand either French or English.

François Arago (1786-1853) was a French physicist and astronomer who demonstrated the wave nature of light; Michael Faraday (1791-1867) was an English chemist and physicist who discovered electromagnetic induction.

16 6. (p. 53) *I regarded him with fear mingled with interest, as, doubtless, Œdipus regarded the Sphinx:* In Greek mythology, the Sphinx, a horrible monster with the body of a winged lion and the head of a woman, waylaid and devoured travelers who couldn't answer her riddle: What walks on four legs in the morning, two legs at noon, and three legs in the evening? Oedipus, son of King Laius of Thebes, answered correctly that a human crawls on hands and knees as a child, walks erect as a man, and uses a cane in old age, thereby causing the Sphinx to kill herself. A version of this story is given by Greek tragic playwright Sophocles (c.496-406 B.C.) in *Oedipus Rex*.

17 (p. 55) Nautilus: Captain Nemo's ship is named after a species of shellfish found in the South Pacific and Indian Oceans that regulates its buoyancy with gas and liquid exchanges through tubes in its shell wall, enabling it to move up and down in the water column; and also after the *Nautilus,* the first submarine to be successfully operated (1801), invented by American engineer Robert Fulton. The first nuclear submarine, the USS *Nautilus,* was commissioned by the U.S. Navy during World War II; it was the first submarine to cross under the ice of the North Pole.

18 . (p. 56) *"My flocks, like those of Neptune's old shepherds":* In Roman mythology, Neptune (called Poseidon by the Greeks) ruled over the sea. His servant Proteus shepherded flocks of seals and dolphins.

19 . (p. 60) *"These musicians ... are the contemporaries of Orpheus":* The most accomplished musician of Greek mythology, Orpheus had the power to calm both gods and men with his music, and even to move inanimate objects. When his wife, Eurydice, died, he played his lyre to convince Pluto, ruler of the underworld, to release her.

20 (p. 64) *"There is a powerful agent, ... the soul of my mechanical apparatus. This agent is electricity":* First introduced to the public at the World's Fair held in Paris in 1867, electricity was not available for domestic use until well into the 1880s. Verne was fascinated by the power of electricity; however, he did not thoroughly understand it, and much of his writing on the subject is conjecture. In fact, if a submarine like the *Nautilus* were to be powered by batteries, the batteries would have to be bigger than the ship itself.

21 . (p.67) *"I use Bunsen's contrivances, not Ruhmkorff's":* Heinrich Daniel Ruhmkorff (1803-1877) was a famed German mechanic who invented the Ruhmkorff coil, an induction coil (for producing high voltage from a low-voltage source) that could produce very large electrical sparks. German chemist Robert Wilhelm Bunsen (1811-1899) invented the Bunsen cell (a device that delivers an electric current), which was more powerful than other cells. Verne is implying that Nemo has discovered a new, more powerful cell or coil.

22 . (p. 68) *“steel plates, whose density is from .07 to .08 that of water”:* The standard English translation of *20,000 Leagues Under the Sea,* used for this edition, misprints many of Verne’s original—and correct—figures, as it does here. Steel has a density of 7.8, not .07 or .08, that of water. If the figures here were correct, steel would be light enough to float. (A steel ship floats because its overall density is less than that of water.)

23 . (p. 76) *Ned named the fish, and Conseil classed them:* At this point Verne’s original French text includes a long passage in which Conseil lectures Ned on the scientific classifications of fish. Ned responds that fish are classified into two categories: fish that can be eaten and fish that can’t! The exchange establishes important character traits of both Conseil and Ned—the one scientific and intellectual, the other practical and hedonistic.

24 . (p. 82) *“the Rouquayrol apparatus, invented by two of your own countrymen”:* Frenchmen Benoit Rouquayrol, a mining engineer, and Auguste Denayrouse, a naval officer, developed the first modern diving cylinder, patented in 1865 as an “Aerophore.” It allowed a diver to breathe compressed air equal to the water pressure of his depth, thus making it possible to descend much deeper than before. The aerophore is the forerunner of modern scuba equipment.

25 . (p. 96) *“the learned Maury”:* American naval officer and oceanographer Matthew Fontaine Maury (1806-1873) wrote what has been called the first textbook of modern oceanography, *The Physical Geography of the Sea.* Verne often returns to Maury as a source.

26 6. (p. 97) *the Sandwich Islands, where Cook died, February 14, 1779:* Both Nemo and Aronnax speak highly of English navigator and explorer Captain James Cook (1728-1779), who completed the first major scientific survey of the South Pacific Ocean. Cook was killed by natives of Hawaii (formerly called the Sandwich Islands) as he returned from his third expedition.

27 (p. 98) *if one can believe Athenæus, a Greek doctor, who lived before Galen:* Greek physician Athenaeus of Attaleia (first century A.D.) founded a school of medicine based in Stoic thought. Galen (A.D. 129-c.199) was also a Greek physician.

28 8. (p. 98) *D‘Orbigny:* French naturalist Alcide Dessalines d’Orbigny (1802-1857) founded the science of stratigraphical paleontology, the study of fossils as they appear in the geographical strata.

29 . (p. 100) *we sighted the Pomotou Islands, the old “dangerous group” of Bougainville:* Count Louis-Antoine de Bougainville (1729-1811), a French navigator, wrote *Description d‘un voyage autour du monde (Description of a Voyage Around the World),* an account of his journey to Polynesia. He nicknamed the archipelago of Polynesia, which includes the Pomotou Islands, the “dangerous group,” partly because of the behavior of the island’s native inhabitants.

30 . (p. 101) *Such is, at least, Darwin’s theory, who thus explains the formation of*

the atolls: Charles Darwin (1809-1882) was an English naturalist whose most famous work, *On the Origin of Species by Means of Natural Selection* (1859), proposed the theory of natural selection and evolution. Darwin also wrote *Structure and Distribution of Coral Reefs,* referred to here. An atoll is a circular coral reef.

31 . (p. 102) *"vanikoro." ... It was the name of the islands on which La Perouse had been lost!:* French navigator Jean-François de Galaup (1741-c.1788), known as La Pérouse, disappeared during an expedition to find the Northwest Passage. His disappearance was one of the great, unsolved mysteries of Verne's day. It is thought he was murdered by natives of the Santa Cruz Islands, part of the Solomon Islands group in the western Pacific Ocean, which includes the island of Vanikoro, or Vanikolo.

32 . (p.169) *"after the construction of the Suez Canal":* Construction of the Suez Canal, a ship canal through the Isthmus of Suez that connects the Red and Mediterranean Seas, was begun in 1859. The canal opened in 1869, the year before this novel was published.

33 . (p. 182) *battle of Actium:* Roman general Octavian defeated Marc Antony and Cleopatra at the naval battle of Actium (31 B.C) to become the first Roman emperor. In one of history's strangest and most important battles, Cleopatra's fleet of sixty ships mysteriously turned tail and fled and Antony followed her, deserting his men.

34 (p. 187) *Michelet:* French historian Jules Michelet (1798-1874) wrote *La Mer (The Sea),* a romantic history of the ocean reputed to be a source of many of Verne's episodes and images. Michelet lost his position as professor of history at the Collège de France when he refused to swear allegiance to Louis-Napoleon (later Emperor Napoléon III).

35 . (p. 195) *Still the same monk-like severity of aspect:* At this point in the narrative, the translator of this edition leaves out two important paragraphs describing portraits hanging in Nemo's room. The portraits, planted by Verne as a clue to Nemo's character, include: Thaddeus Kosciusko (1746-1817), a Polish general and patriot who fought for Polish independence from Russia and Prussia; Markos Botsaris (c.1788-1823), a Greek patriot and a prominent figure in the Greek War of Independence from the Turks; Daniel O'Connell (1775-1847), an Irish nationalist leader known as the Liberator, who fought for Catholic Emancipation; George Washington (1732-1799), the American general who commanded the Continental armies during the Revolutionary War and the first president of the United States; Daniele Manin (1804-1857), an Italian patriot who fought against Austrian control; and Abraham Lincoln (1809-1865), president of the United States during the American Civil War. Also displayed in Nemo's room is an etching of American abolitionist John Brown (1800-1859) hanging on the gallows, whom Verne called a martyr to the emancipation of the black race. Given the fact that Verne and his editor cut the explanation of Nemo's motivations from the original manuscript (see the Introduction, pp. xxiv-xxv), this collection of portraits is a crucial key to understanding the captain's character.

36 . (p. 206) *ATLANTIS:* A legendary civilization of mystery and fascination in Western culture, Atlantis may have been destroyed by flood or earthquake in ancient times. Scientists and archaeologists have been searching for Atlantis for hundreds of years. Verne goes on to list a few of the writers, historians, and philosophers who have described Atlantis, from Origen (c. A.D. 200), an early Greek Christian and defender of the Church, to the more modern Georges-Louis Leclerc Buffon (1707-1788), a renowned French naturalist and author of the 44-volume *Histoire Naturelle (Natural History)*.

37 . (p. 228) *which altered the whole landscape like a diorama:* Invented in the 1820s by French artists J. M. Daguerre and Charles-Marie Bouton, a diorama is a painting seen from a distance through a large opening that utilizes staggered canvases, transparent cloth, and a changing play of light to produce a three-dimensional scenic optical illusion.

38 8. (p. 235) *Doubtless the Canadian did not wish to admit the presence of the South Pole:* On the date of publication of this book, neither of the poles had been discovered. American explorer Robert Peary was the first to reach the North Pole in 1909; Norwegian explorer Roald Amundsen reached the South Pole two years later.

39 (P. 270) *To paint such pictures, one must have the pen of the most illustrious of our poets, the author of "The Toilers of the Deep":* The best-known passage of French writer Victor Hugo's 1866 novel *(Travailleurs de la mer)* is a battle between the hero and a giant octopus that lives in a cave in the English Channel. Verne greatly admired Hugo's craft and art.

40 (p. 278) *at a depth of more than 1,400 fathoms, that I saw the electric cable lying on the bottom.... In 1863, the engineers constructed another one, measuring 2,000 miles in length, and weighing 4,500 tons, which was embarked on the Great Eastern:* In 1866 the *Great Eastern* completed laying the first transatlantic telegraph cable, linking Europe to America; it was the only ship large enough to carry enough cable to span the entire Atlantic. Verne sailed to New York aboard the *Great Eastern* in 1867, in his one and only trip to North America. He was impressed by the ship, which could carry 4,000 passengers. He used notes compiled on his voyage while writing 20,000 *Leagues Under the Sea* as well as his 1871 novel *Une ville flottante (A Floating City)*.

41 (p. 281) *"On the 11th and 12th Prairal of the second year":* Prairal is the period of time between May 20 and June 18 marked on the French revolutionary calendar. Acting against Catholic tradition, the National Convention adopted a new calendar, in which years were numbered not from the birth of Christ but from the day the French Republic was proclaimed, September 22, 1792. Months were given names that evoked their season. Prairal (prairie is French for "meadow") was the ninth month of this new calendar, which was abandoned in 1806.

42 . (p. 290) *that strange region where the foundered imagination of Edgar Poe roamed at will. Like the fabulous Gordon Pym, ... "that veiled human figure, ... which defends the approach to the pole":* Verne greatly admired American writer

Edgar Allan Poe's style and craft. Many Verne scholars believe Verne got the idea for his first novel *Five Weeks in a Balloon* (1863) from Poe's 1850 story "The Balloon Hoax." Poe's novel *The Narrative of Arthur Gordon Pym* (1838) ends with a description similar to the one Verne gives here. Poe's 1841 short story "A Descent into the Maelstrom" has much in common with the final scene of Verne's novel.

Inspired by
Twenty Thousand Leagues Under the Sea

Science Fiction

Oscar Wilde is said to have remarked, somewhat cryptically, that H. G. Wells was a "scientific Jules Verne." It is hard to know who Wilde wished to slight more by his comment, but it has long been evident that Verne and Wells are *the* two progenitors of modern science fiction. Without these two seminal authors, scientific fiction—a genre that includes works by Kingsley Amis, Isaac Asimov, Anthony Burgess, Arthur C. Clarke, Philip K. Dick, Aldous Huxley, C. S. Lewis, George Orwell, Ray Bradbury, and J. R. R. Tolkien—would not exist as we know it today.

Herbert George Wells supported himself with teaching, textbook writing, and journalism until 1895, when he made his literary debut with the now-classic novel *The Time Machine.* He followed this before the end of the century with *The Island of Dr. Moreau, The Invisible Man,* and *The War of the Worlds*—books that established him as the first original voice since Verne in the genre of scientific fiction. However, while Verne dealt with realistic scientific phenomena—for example, the submarine *Nautilus in Twenty Thousand Leagues Under the Sea* predates the modern submarine—Wells was interested in, as Jorge Luis Borges put it, "mere possibilities, if not impossible things." Time travel, interplanetary warfare, invisibility—these are the stuff of Wells's conceptual fiction.

Wells disliked being compared to his literary ancestor. In a letter to J. L. Garvin, editor of *Outlook,* Wells refused to attack Verne publicly, though in a letter he openly denied having been influenced by him: "A good deal of injustice has been done the old man [Verne] in comparison with me. I don't like the idea of muscling into the circle of attention about him with officious comments or opinions eulogy. I've let the time when I might have punished him decently go by." Wells was a prolific and diverse writer, tackling social philosophy and criticism, history, utopian and comic novels, literary parodies, and even feminism; but he is best remembered for his auspicious beginnings as a science fiction writer.

Film

Twenty Thousand Leagues Under the Sea was adapted into film as early as 1905, with an eighteen-minute silent. A feature-length silent adaptation, directed by

Stuart Paton and released in 1916, includes plot elements from Verne's later novel *The Mysterious Island,* which delves into Captain Nemo's past as the Indian Prince Dakkar. Paton's film features elaborate underwater photography that is impressive for its time.

A wave of Jules Verne film adaptations appeared in the 1950s, including *Around the World in 80 Days* (1956), which won the Academy Award for Best Picture, and *Journey to the Center of the Earth* (1959). Disney's *20,000 Leagues Under the Sea* (1954), directed by Richard Fleischer, showcases many of the day's biggest stars: Kirk Douglas as Ned Land, James Mason in the role of Captain Nemo, and Paul Lukas as Pierre Aronnax. Despite its camp flavor, this version stands as the definitive adaptation of the novel, the standard to which all others are compared. After more than half a century, the squid attack scene, accomplished solely though the use of puppets, remains intense and compelling. The film won Academy Awards for special effects and art direction. Though key plot elements differ, it remains true to the spirit of the book and faithfully conveys Verne's ideals of science, brotherhood, and vengeance.

A Hanna-Barbera animated version of the novel appeared in 1973, and two live-action television versions were broadcast in 1997. Rod Hardy's version runs four hours and stars Michael Caine as Captain Nemo, Patrick Dempsey as Pierre Aronnax, Bryan Brown as Ned Land, and Mia Sara as Nemo's reclusive daughter Mara. Michael Anderson's television version, which stars Richard Crenna as Pierre Aronnax, Ben Cross as Captain Nemo, and Paul Gross as Ned Land, adds new elements: Rather than utilizing the traditional male assistant, in this film Professor Aronnax smuggles on board his young daughter disguised as a man. Captain Nemo and the Nautilus enter later, allowing time for the film to develop before the show-stopping seacraft and its captain appear.

The League of Extraordinary Gentlemen

Artist and comics author Alan Moore, a fan of nineteenth-century adventure yarns, assembled an all-star cast of Victorian-era protagonists in his two-volume graphic novel *The League of Extraordinary Gentlemen* (2000, 2003). Moore teamed *Twenty Thousand Leagues Under the Sea* hero Captain Nemo with Allan Quatermain from H. Rider Haggard's *King Solomon's Mines;* Hawley Griffin, a.k.a. H. G. Wells's Invisible Man; Robert Louis Stevenson's Dr. Jekyll and his alternate persona Mr. Hyde; and Mina Murray (née Harker) from Bram Stoker's *Dracula.* (The 2003 film adaptation takes many liberties with the original comic, adding Oscar Wilde's Dorian Gray and Mark Twain's Tom Sawyer to the cast.) Allan Quatermain leads this motley band of heroes as they try to stop a notorious villain from firebombing London's East End. Captain Nemo provides the team with his unprecedented mode of transport, the *Nautilus,* which he pilots through the channels of Venice, among other exotic environs. In the end, the villain turns out to be none other than Professor

Moriarty—Sherlock Holmes's arch nemesis. In the second volume of Moore's comic book, Edgar Rice Burroughs's Mars expert John Carter (from *John Carter of Mars)* helps the band of heroes as the interplanetary conflict of Wells's *The War of the Worlds* unfolds.

Comments & Questions

In this section, we aim to provide the reader with an array of perspectives on the text, as well as questions that challenge those perspectives. The commentary has been culled from sources as diverse as reviews contemporaneous with the work, letters written by the author, literary criticism of later generations, and appreciations written throughout the work's history. Following the commentary, a series of questions seeks to filter Jules Verne's Twenty Thousand Leagues Under the Sea through a variety of points of view and bring about a richer understanding of this enduring work.

Comments

R. H. SHERARD

"The great regret of my life is that I have never taken any place in French literature."

As the old man said this his head drooped, and a ring of sadness sounded in the cheerful and hearty voice.

"Je ne compte pas dans la litterature Française," he repeated. Who was it who spoke thus, with drooping head, and with a ring of sadness in his cheerful voice? Some writer of cheap but popular *feuilletons* for the halfpenny press, some man of letters who has never made a scruple of stating that he looks upon his pen as a money-getting implement, and who has always preferred to glory and honor a large account at the cash office of the Society of French Men of Letters? No; strange, monstrous, as it will appear, it was none other than Jules Verne. Yes, Jules Verne, the Jules Verne, your Jules Verne and mine, who has delighted us all the world over for so many years, and who will delight the world for generations and generations to come.

It was in the cool withdrawing-room of the Société Industrielle at Amiens that the master said these words, and I shall never forget the tone of sadness in which he said them. It was like the confession of a wasted life, the sigh of an old man over what can never be recalled. It was to me a poignant sorrow to hear him speak thus, and all that I could do was to say, with no unfeigned enthusiasm, that he was to me and millions like me, a great master, the subject of our unqualified admiration and respect, the novelist who delights many of us more than all the novelists that have ever taken pen in hand. But he only shook his gray head and said: "I do not count in French literature."

—from *McClure's Magazine* (January 1894)

ROBERT LOUIS STEVENSON

I can't help fancying that, once he has got his story fairly planned and put together, Jules Verne careers on the paper with the most flagrant and detestable vivacity. Of human nature it is certain he knows nothing; and it is almost with a sense of relief that one finds, in these sophisticated days a good trotting-horse of an author who whistles by the way and affects to know nothing of the mysteries of the human heart. Once, indeed, he has gone out of his way, and with perfect ill-success: his Captain Nemo, of the undying hatred and the Scotch impromptus, is a memorable warning. But his extraordinary stock-in-trade consists of several somewhat time-worn dolls: scientific people with bald heads, and humorous seamen of indescribable fidelity. His marionettes are all athletic and all virtuous. I do not remember any bad character in his gallery, or one who was not afraid. "If I sought to despair, I could not," says Professor Aronnax, referring to a very ticklish moment of his life. And his confidence was not misplaced. Jules Verne has the point of honour of a good ship-captain, and holds himself permanently responsible for the lives of all the crew. A few anonymous persons may perish by the way, lest we should think too lightly of the perils; but so soon as a man has been referred to by name, he bears a charmed existence and will turn up at the last page in good health and animal spirits.

—*The Academy* (June 3, 1876)

CURRENT OPINION

The most widely-known exploitation of the so-called "scientific" imagination is embodied in Jules Verne's "Twenty Thousand Leagues Under the Sea." In our time, when the use of the imagination in science is made so much of by men like Sir Oliver Lodge and J. J. Thomson, it is important to consider every available test of the factor in question. It is often held that the use of the imagination in science is dangerous because of the tendency to "false" ideas. For example, the late Professor Becquerel complained that the "scientific" romances of Jules Verne filled the popular mind with the sheer delusions on the whole subject of applied science. He deemed the Frenchman, in fact, the natural father of pseudo-science, one of the intellectual perils of his age. The subject has been taken up from a severely practical standpoint by that high authority on the submarine, Doctor C. H. Bedell, who has had over twenty years' experience with this type of vessel. He observes at the outset, in the *Journal* of the American Society of Mechanical Engineers, that as far as the handling of a submarine is concerned, the boats of the present day are as perfect as the *Nautilus* of Jules Verne's story. They make his fancy fact.

We may even, if we so desire, make our boat so that when it is at rest submerged a man with a diving helmet may pass from it into the sea and, entirely disconnected from the submarine or the surface, explore the ocean floor for an hour or more, as Captain Nemo of the *Nautilus* did. That such construction is not used is due to the fact that there seems to be no material

need for such operations. The *Nautilus* was driven by electricity. We also use electricity when running submerged, but we obtain our electricity from storage batteries, whereas Captain Nemo obtained his from the sea. The great difference between fiction and reality in this case is that the *Nautilus* was able to go around the world with one supply of energy, while we are obliged to come to the surface after one or two hundred miles for the purpose of recharging our storage batteries....

Viewing the prophetic submarine of Jules Verne as a whole, in the light of practical experience with the reality, it is clear that the author of "Twenty Thousand Leagues Under the Sea" has vindicated all that is said to-day regarding the use of the imagination in science. The denunciations of Verne by contemporary scientists are seen to have been unwarranted. He did not deal in pseudo-science. He conveyed no false idea. He erred on points of detail in the application of principle. His romance is something more than "mere literature." It is a substantial value of the poetical in science, a proof of the contention that the imagination of the French is essentially scientific as distinguished from the imagination of the English which is in the main poetical.

Finally, the romance goes far to justify the contention that the imagination is on the whole a more reliable faculty than the intelligence, seeing that when Verne applied his intelligence alone to the solution of a practical problem in his work he went astray but he made no essential error when he depended upon his imaginative faculty.

—February 1918

H. G. WELLS

The interest Verne invoked was a practical one; he wrote and believed and told that this or that thing could be done, which was not at that time done. He helped his reader to imagine it done and to realise what fun, excitement or mischief would ensue. Many of his inventions have 'come true.'

—from his preface to *Seven Famous Novels* (1934)

PAUL VALÉRY

What would or could such a maker of imaginary worlds as Jules Verne or H. G. Wells do today? Note that although they invented imaginary worlds, neither of them attempted anything on the intellectual side. For example, they made no effort to imagine the arts of the future. The celebrated Captain Nemo, as everyone knows, plays the organ in his *Nautilus* at the bottom of the ocean, and what he plays is the music of Bach or Handel. Jules Verne did not foresee our electronic music, nor did he think up new combinations or compositions, nor some yet unknown kind of aesthetics.

—from *History and Politics* (1962; translated by Denise Folliot and Jackson

Mathews)

ROLAND BARTHES

All the ships in Jules Verne are perfect cubby-holes, and the vastness of their circumnavigation further increases the bliss of their closure, the perfection of their inner humanity. The *Nautilus,* in this regard, is the most desirable of all caves.

—from *Mythologies* (1972; translated by Annette Lavers)

Questions

1. Does it matter that Jules Verne predicted more or less accurately some discoveries and scientific events? After all, the audience of his own time did not know that his predictions would come true, yet he was immensely popular.
2. Commenting about Verne, Robert Louis Stevenson said, “Of human nature it is certain he knows nothing.” Is that fair criticism? What’s the evidence either way?
3. Just what is the appeal of these scientific romances? Are they fantasies of escape from the quotidian? A de-familiarization of the world that makes it seem fresh? Are they of the same interest to all ages and both sexes?
4. Is Captain Nemo intelligible on the basis of the information given about him in the novel? Do we really understand his motivations? As Victoria Blake discusses in her introduction, Verne and his editor removed background information on Nemo from the original manuscript. Would the novel have been better if this material had remained? Or does the mystery of Nemo add to the appeal of the novel?

For Further Reading

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—. *Jules Verne’s Twenty Thousand Leagues Under the Sea: The Definitive Unabridged Edition Based on the Original French Texts.*

Translated and annotated by Walter James Miller and Frederick Paul Walter. Annapolis, MD: Naval Institute Press, 1993.

a

Marine mammal of the order Cetacea, which includes whales, dolphins, and porpoises.

b

Scientists who study the natural history of fishes.

c

Chain of islands off the southern tip of Alaska, still prime whale-watching sites.

d

Square-rigged warship.

e

Legendary Scandinavian sea monster.

f

Le Constitutionnel was a nineteenth-century liberal daily French newspaper known for its extreme political views.

g

This well-known London-based insurance company began by offering marine insurance.

h

Rifles used by the French army in the nineteenth century.

i

Ironclad warship; the term is derived from the USS *Monitor,* a warship in America's Union navy and one of the first ironclad warships.

j

Printed in quarto pages, in which paper is folded in half and in half again to form four sheets.

k

Weapon consisting of a spear and a battle-ax, used especially in the fifteenth and sixteenth centuries.

l

Extinct prehistoric relatives of, respectively, the warthog, the horse, the deer, and the raccoon.

m

Or babirusa; a large wild swine of Indonesia.

n

Raised deck at the back, or stern, of a ship.

o

Wharf.

p

Or mizzenmast; the mast located behind the mainmast on a ship, usually the third mast.

q

Biblical sea monster (described in the Bible, Job 41:1-34),

r

That is, a crafty sperm whale.

s

Downwind; facing the direction toward which the wind is blowing.

t

In Greek mythology, fire-breathing monsters.

u

Forecastle: forward part of a ship's upper deck; *taffrail:* rail surrounding the stern.

v

A fathom, used especially for measuring water depth, is equal to 6 feet.

w

Electric eel.

x

On alert (French).

y

Reference to the biblical story of Jonah, who was swallowed by a whale and thus saved from drowning.

z

Or Scots; people of Scotland.

aa

French scientists Louis-Pierre Gratiolet (1815-1865) and Josef Engel (1816-1874) developed a scientific method for judging character from facial expressions.

ab

Verne was a proponent of Esperanto, a universal language first published in 1887 to help people from different nations communicate.

ac

Mobile within the mobile element (rough Latin).

ad

Potash, or caustic potash, is a potassium compound used in agriculture and industry.

ae

Nemo is a Latin word meaning “no one” or “nobody.”

af

Genus name of the sea cucumber, a worm-like invertebrate.

ag

The translator here omits a long paragraph listing authors and titles meant to establish Nemo’s character as a Renaissance man and to display the scope of Nemo’s reading and interests.

ah

Jean-Baptiste Tavernier (1605-1689) journeyed six times to the East and published a two-volume work, *Les six voyages de J. B. Tavernier (The Six Voyages of J. B. Tavernier).*

ai

Long, wispy cirrus clouds, from which sailors predict impending winds.

aj

Fictional island northwest of Hawaii.

ak

Firm ground (Latin).

al

Glass bottles coated with metal foil used to accumulate electricity.

am

Large, web-footed bird; a sailors’ superstition held that killing these birds brought bad luck.

an

Or Cretan; Candia is an ancient name for the Greek island of Crete.

ao

Tiny, usually microscopic animals.

ap

Jean Macé (1815-1894) worked with Verne’s publisher at the *Magazine of Education and Recreation,* in which *20,000 Leagues Under the Sea* was first printed.

aq

Celebration (French).

ar

Made by Bazin (French).

as

Strait between New Guinea and Australia.

at

Bitter or troubled dreams (Latin).

au

Sacred river of the Indian subcontinent.

av

Luminous nighttime phenomenon appearing in the upper atmosphere of the Northern Hemisphere; also known as “northern light.”

aw

Greek geographer (c.63 B.C.-C.A.D. 23) whose *Geographia* was the standard source for geographic and ethnographic knowledge in ancient times.

ax

Summer winds that blow over the Mediterranean for about forty days.

ay

Meaning “red.”

az

Marine mammal of the western Pacific and Indian Oceans with a long body tapered at both ends and a fluked tail like whales and dolphins; also called a sea cow for its habit of “grazing” on vegetation on the ocean floor.

ba

Much bigger than a Dugong’s actual length, which averages about 8 feet.

bb

Collective name for the lands of the Pacific Ocean, especially when referring to the central and southern Pacific.

bc

There, in King Neptune’s abyss by Kárpathos, his spokesman is azure-hued Proteus (Latin); from book 4 of *Georgica,* by Roman poet Virgil (70-19 B.C.). In classical mythology, Neptune is the god of the sea; Proteus is a minor sea god and Neptune’s servant, who can change his form at will. Kárpathos is a Greek island.

bd

Or Pesce, Italian for “fish.”

be

Group of Greek islands in the southern Aegean Sea.

bf

Or Thira, an island in the Cyclades; it was nearly destroyed almost 3,000 years ago by a huge volcanic eruption and today is sometimes associated with the fabled civilization of Atlantis (see endnote 36).

bg

Preeminent; the best of a kind (French).

bh

Roman gods of the sea and the underworld, respectively (known to the Greeks as Poseidon and Hades).

bi

Roman goddess of love and beauty (known to the Greeks as Aphrodite).

bj

Ancient name for the Sea of Marmara in northwestern Turkey, which connects the Black Sea and the Aegean.

bk

Peasant of classical mythology who killed herself after angering Minerva (goddess of wisdom) by besting her in a weaving contest; Minerva took pity on her and transformed her into a spider.

bl

Spanish enclave in northern Morocco, opposite Gibraltar on the Strait of Gibraltar; a barrier here would close off the Mediterranean from the Atlantic.

bm

Contemporary estimates are much higher.

bn

That is, the Cape of Good Hope, off South Africa.

bo

Reference to the ascension of the Duke of Anjou, grandson of Louis XIV (king of France, 1643-1715), to the Spanish throne as Philip V in 1700, which precipitated the War of the Spanish Succession.

bp

An acropolis (Greek for “uppermost city”) is the fortified height of an ancient Greek city; crowning the famed Acropolis of Athens is the Parthenon, a Doric temple dedicated to Athena, the goddess of wisdom.

bq

Ancient Roman city destroyed when the volcano Vesuvius erupted in A.D. 79; it was preserved by a 20-foot blanket of volcanic ash and debris and has been the site of archaeological excavations since 1748.

br

Or Pillars of Hercules; two rock promontories at the eastern end of the Strait of Gibraltar; according to legend, the rocks were placed there by the mythical Greek hero Hercules.

bs

Renowned Greek philosopher (384-322 B.C.)

bt

Clogged with seaweed and kelp, the Sargasso Sea, a large body of relatively still water in the North Atlantic Ocean, was feared by early sailors who thought the seaweed was evidence of a shallow bottom or, more spectacularly, that it would stop their ship dead.

bu

Sperm whales.

bv

Verne means March, which is an autumn month in the Southern Hemisphere.

bw

The blue whale, the largest animal in the world, measures more than 100 feet in length.

bx

White pillar or halo in the sky caused by the reflection of light off icebergs.

by

In 1958 two U.S. nuclear submarines crossed the Northwest Passage (northern sea passage between the Atlantic and Pacific Oceans) by going under the ice. With a nod to Verne's predictive abilities, one of the submarines was named *Nautilus*.

bz

Mount Erebus, on Ross Island, Antarctica, is believed to be the only active volcano in the Antarctic; it was discovered by Sir John Ross in 1841.

ca

Conventionalized iris design associated with heraldry; *fleur de lis is* French for "flower of the lily."

cb

The disease is actually transmitted by the bite of an infected yellow-fever mosquito.

cc

That is, octopi, or, as Verne probably intended, squids.

cd

1864 is likely a typo. Reference to an earthquake in Japan that caused a wave to hit San Francisco, California, on December 23, 1854.

ce

Or La Manche, French name for the English Channel.

cf

The full name of this French warship was *The People's Avenger;* it sank after a fight with the British in 1793.

cg

Ceremonial sacrifice of 100 oxen or cattle, an ancient Greek and Roman ritual meant to appease angry gods.

ch

The narwhale was referred to as 'the unicorn of the sea' because of its horn.

ci

For an answer to this question, read Verne's 1874 novel *L'Île Mystérieuse (The Mysterious Island)*.

cj

Biblical book that emphasizes the limits of human knowledge.